



**NAVAL
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MONTEREY, CALIFORNIA

THESIS

**FIRE WHEN READY: A NEEDS-BASED ANALYSIS
OF FIREARMS IN THE U.S. FIRE SECTOR**

by

Christopher E. Zam

March 2021

Co-Advisors:

Patrick E. Miller (contractor)
Erik J. Dahl

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REPORT DOCUMENTATION PAGE			<i>Form Approved OMB No. 0704-0188</i>	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington, DC, 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE March 2021	3. REPORT TYPE AND DATES COVERED Master's thesis	
4. TITLE AND SUBTITLE FIRE WHEN READY: A NEEDS-BASED ANALYSIS OF FIREARMS IN THE U.S. FIRE SECTOR			5. FUNDING NUMBERS	
6. AUTHOR(S) Christopher E. Zam				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release. Distribution is unlimited.			12b. DISTRIBUTION CODE A	
13. ABSTRACT (maximum 200 words) Recent active shooter incidents and other on-the-job violent encounters have caused U.S. fire departments to consider arming their personnel. Since governmental bodies and safety agencies have failed to establish firearms-use guidelines within the fire sector, many fire service decision-makers have arbitrarily adopted gun carry policies. This thesis investigates the most relevant factors such as firearms program costs, gun training concerns, and safety agency positions on firearms for the U.S. fire sector to consider when establishing firearms programs and employs a comparative options analysis methodology. Issues surrounding proper training in gun use and gun storage, the lack of safety agency guidance, and conflicting gun policy attitudes are some of the crucial elements addressed. This work evaluates the Department of Public Safety (DPS), Tactical Fire Team (TFT), and conceal carry programs, which can be leveraged by fire stakeholders to make informed decisions as they consider including firearms in their operational models. Finally, this study concludes that departments should fashion firearms programs in the image of established armed teacher programs, which have yielded the most robust safety records and that the National Fire Protection Agency (NFPA) should be assigned to set standards for a full suite of safe gun practices. Moreover, if properly motivated, the federal government can enact one national firearms policy for fire service members.				
14. SUBJECT TERMS firearms, fire service, gun policies, fire safety organizations, concealed carry permits, tactical fire teams, Law Enforcement Officer Safety Act, comparative options analysis, armed educators, gun security issues, Department of Public Safety, DPS, Tactical Fire Team, TFT, National Fire Protection Agency, NFPA			15. NUMBER OF PAGES 127	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UU	

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IN THE U.S. FIRE SECTOR**

Christopher E. Zam
Fire Captain, Fire Department of the City of New York
BA, John Jay College of Criminal Justice, 2018

Submitted in partial fulfillment of the
requirements for the degree of

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

from the

**NAVAL POSTGRADUATE SCHOOL
March 2021**

Approved by: Patrick E. Miller
Co-Advisor

Erik J. Dahl
Co-Advisor

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

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ABSTRACT

Recent active shooter incidents and other on-the-job violent encounters have caused U.S. fire departments to consider arming their personnel. Since governmental bodies and safety agencies have failed to establish firearms-use guidelines within the fire sector, many fire service decision-makers have arbitrarily adopted gun carry policies. This thesis investigates the most relevant factors such as firearms program costs, gun training concerns, and safety agency positions on firearms for the U.S. fire sector to consider when establishing firearms programs and employs a comparative options analysis methodology. Issues surrounding proper training in gun use and gun storage, the lack of safety agency guidance, and conflicting gun policy attitudes are some of the crucial elements addressed. This work evaluates the Department of Public Safety (DPS), Tactical Fire Team (TFT), and conceal carry programs, which can be leveraged by fire stakeholders to make informed decisions as they consider including firearms in their operational models. Finally, this study concludes that departments should fashion firearms programs in the image of established armed teacher programs, which have yielded the most robust safety records and that the National Fire Protection Agency (NFPA) should be assigned to set standards for a full suite of safe gun practices. Moreover, if properly motivated, the federal government can enact one national firearms policy for fire service members.

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LIST OF ACRONYMS AND ABBREVIATIONS

ASHER	Active Shooter Hostile Environment Response
CDC	Centers for Disease Control and Prevention
CPD	Chicago Police Department
CSLA	The Child Safety Lock Act
DPS	Department of Public Safety
EMS	Emergency Medical Services
EMT	Emergency Medical Technician
FASTER	Faculty/Administrator Safety Training and Emergency Response
FFA	Federal Firearms Act
FPCA	Federal Fire Prevention and Control Act
FBI	Federal Bureau of Investigations
FEMA	Federal Emergency Management Agency
FOPA	Firearms Owners Protection Act
GCA	Gun Control Act
IAFC	International Association of Fire Chiefs
IAFF	International Association of Firefighters
LE	Law Enforcement
LEO	Law Enforcement Officer
LEOSA	Law Enforcement Officers Safety Act
LFRA	Loveland Fire Rescue Authority
LPD	Loveland Police Department
MCI	Mass Casualty Incident
NFA	National Firearms Act
NFIRS	National Fire Incident Reporting System
NFPA	National Fire Protection Association
NICS	The National Instant Criminal Background Check System
NIOSH	National Institute for Occupational Safety and Health
NLEFIA	National Law Enforcement Firearm Instructors Association
NYPD	New York Police Department
NRA	National Rifle Association
OIS	Officer Involved Shooting
OSH	Occupational Safety and Health Act

OSHA	Occupational Safety and Health Organization
PLCAA	Protection of Lawful Commerce in Arms Act
RTF	Rescue Task Forces
SCOTUS	Supreme Court of the United States
SWAT	Special Weapons and Tactics
TFT	Tactical Fire Team
USFA	United States Fire Administration

EXECUTIVE SUMMARY

What are the most relevant factors to consider when establishing firearms policies within the U.S. fire sector? What are the implications for fire organizations opting to implement gun-carry models? Can a Policy Options Analysis offer practical gun policy guidance for fire jurisdictions throughout the United States, or does the complexity of gun-carry models demand tailor-made solutions for individual fire agencies? These three questions underpin the research conducted within this thesis.

Although there is no consensus on whether guns are an appropriate tool for the U.S. fire sector, firearms have been used in the U.S. fire service for more than seven decades. In recent years, an uptick in the number of fire responses involving hostile actors and a steady increase in active shooter events have pushed more departments toward arming personnel.¹ This research revealed that U.S. fire agencies lack a standard rubric for making the critical decision to adopt firearms and provides fire sector stakeholders and policymakers a better understanding of critical issues that inform the decisions to embrace or eschew guns.

This discussion is framed by providing a background on the debate over arming firefighters. It revealed that although many fire departments have adopted firearms carry policies, there is currently a lack of focused literature related to how those departments arrived at their decisions to arm personnel. This absence of literature validated the need for this research. Since the fire service fails to maintain common standards for taking on and maintaining gun programs, a literature review filled that information vacuum with an examination of the law enforcement (LE) sector, education sector, safety agency sector, and various levels of government and their gun program challenges and concerns.

1. Jennifer A. Taylor and Regan Murray, *Mitigation of Occupational Violence to Firefighters and EMS Responders* (Emmitsburg, MD: U.S. Fire Administration, 2017), 28, 55. https://www.usfa.fema.gov/downloads/pdf/publications/mitigation_of_occupational_violence.pdf. This USFA report acknowledges the gap in EMS and firefighter training and equipment, and recommends a “windshield” approach. In summary, personnel should remain in their vehicles and call for police backup when violence is expected or encountered. Additionally, the report confirms that exposure to violence is a growing problem for fire sector emergency responders.

In its examination of gun use in the law enforcement and education sectors, this research addressed weapons program concerns such as marksmanship, infrequent gun use, weapons security problems, and the dangers of friendly fire and unintentional discharges. The study of U.S. police departments revealed a long history of inconsistent performance in shooting accuracy, inadequate compliance with safe gun storage practices, and a perennial theme of unintentional discharge mishaps. As a general rule, fire agency decision-makers should not look to fashion gun carry programs in the image of police law enforcement entities.

Furthermore, this research scrutinized federal, state, and local government roles to reveal how these bodies influence the creation of gun policies. The study of government shows that although state-level legislators generally drive firearms policies, the federal government can establish gun laws when conditions are favorable. The Law Enforcement Safety Act (LEOSA) of 2004 serves as evidence that national gun policies are achievable.

The research also analyzed safety agencies and the ways they impact workplace gun policies. Remarkably, the Occupational Safety and Health Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the United States Fire Administration (USFA), and the National Fire Protection Association (NFPA) have collectively failed to establish gun safety rules and regulations for U.S. fire department workplaces. Safety-agency inertia must be transformed into action to enhance workplace safety throughout the fire service. Furthermore, this study of safety organizations confirmed that the NFPA has established more than 300 codes and standards for U.S. fire departments.² Therefore, the NFPA is uniquely suited to take on the creation and enforcement of gun safety laws for U.S. fire entities.

Interestingly enough, fire service members may not need guns to accomplish their homeland security mission. Upon viewing the figures available from the NFPA for the years 2010–2019, there is virtually no indication that acts of violence play any significant

2. “NFPA Overview,” accessed June 13, 2020, National Fire Protection Association (NFPA), <https://www.nfpa.org/overview>.

role in the volume of firefighter injuries.³ A careful examination of the relevant data for the past decade reveals that firefighter deaths attributable to violence accounted for just over 1% of the total firefighter line of duty casualties.⁴ Even though statistics imply that guns are rarely needed, many fire agencies continue to authorize firearms use. Therefore, it must suffice to acknowledge the argument against arming firefighters and continue with the conversation of how to develop best practices in this arena.

This work included a Policy Options Analysis of three fire sector gun models and three distinct gun carry programs' merits and drawbacks. The Sunnyvale, California, Department of Public Safety; Loveland, Colorado Tactical Fire Teams, and Concealed Carry frameworks were chosen for comparison due to their distinctive features and their ability to persist. The Department of Public Safety (DPS), Tactical Fire Team, and concealed carry models were measured against each other for efficacy across a continuum of performance indicators. Program costs, response times, urban versus rural value, gun law tie ins, and political implications of these models were compared and contrasted. The research illustrated that none of these three models have a universal, clear-cut advantage over the others. Instead, stakeholders need to accept that each of these three models is inherently flawed to varying degrees. Imperfect as these three gun programs may be, however, they should not be overlooked as they provide much-needed perspective for fire service decision-makers.

This research ended with four principal findings. First, fire agencies should follow the gun templates used within the education sector for gun training, handling, and storage. More than 20 years of unsurpassed safety statistics insist that the education sector has developed best firearm practices for an industry composed of traditionally unarmed civil servants.

3. Richard Campbell and Joseph Molis, "United States Firefighter Injuries in 2018," *NFPA Journal*, Nov. 1, 2019, under "Nature and Cause of Fireground Injuries," <https://www.nfpa.org/News-and-Research/Publications-and-media/NFPA-Journal/2019/November-December-2019/Features/FF-Injuries>.

4. Rita Fahy, Jay Petrillo, and Joseph Molis, *Firefighter Fatalities in the United States* (Quincy, MA: National Fire Protection Association, 2020), <https://www.nfpa.org/News-and-Research/Data-research-and-tools/Emergency-Responders/Firefighter-fatalities-in-the-United-States>.

Second, this work demonstrated that the U.S. federal government can create national gun policies for fire sector organizations. Although Congress' enumerated powers generally prohibit its involvement in comprehensive gun legislation, the establishment of LEOSA law following 9/11 is proof that stakeholder collaboration across all government levels is possible. Politicians, legislators, pundits, and the public should continue to contemplate the usefulness of one national gun policy for first responders.

Another core finding of this research is that national safety agencies have completely failed the U.S. fire service. All four of the most respected fire safety organizations have withdrawn from gun policy conversations. Despite claims by OSHA, NIOSH, the USFA, and the NFPA that firefighter health and safety is of paramount importance, none of these entities offers meaningful standards or guidelines for safe gun handling, cleaning, storage, or usage within workplaces. The examination of these particular agencies concluded that the NFPA is best suited for policy guidance and enforcement. To date, the NFPA has created hundreds of standards for the U.S. fire service; thus, it is likely that its influence could facilitate the adoption of universal workplace gun safety protocols.

The final key revelation is that semantics can significantly impact the public's perception of gun carry models. DPS of Sunnyvale, California, best exemplifies the influence of semantics on civilian attitudes. Research conducted here notes that the overwhelming majority of objections to the DPS model revolve around fiscal interests, logistical concerns, training obstacles, and frictions over police unions' and fire unions' conflicting interests. Interestingly, minimal political or public outrage exists over placing firearms in the hands of DPS employees. When arming firefighters, organizations should consider that a change in agency title could facilitate acceptance of firearms carriage models. Similarly, rebranding employees as public safety officers could reduce public anxieties that are often attached to the notion of arming firefighters.

Firearms policies already exist in fire departments located throughout the United States, and violent responses and active shooter incidents continue to provoke fire service interest in adopting gun carry programs. Although many U.S. citizens oppose firearms acquisition for ethical or philosophical reasons, all of us must partake in gun policy

deliberations. Fire sector gun program architecture is still relatively new and flexible. Those who retreat from involvement in this debate are missing an opportunity to contribute to the creation of safer, more robust policies.

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ACKNOWLEDGMENTS

I want to thank the leadership of the FDNY for allowing my participation in the Naval Postgraduate School Center for Homeland Defense and Security (CHDS) master's program. Participation in this program has been the fulfillment of a long-held hope of following in the footsteps of many inspiring FDNY NPS alumni. I thank each and every firefighter, officer, and chief that I have ever had the pleasure to work with. Nearly two decades of shared experiences with FDNY members have helped lend deeper context to the research and analysis of this thesis.

Alongside this invaluable encouragement and support, my interactions with both NPS and CHDS staff have greatly enhanced my appreciation and understanding of homeland security concerns and facilitated the timely production of this thesis. I would like to extend special thanks to Christopher Bellavita for promoting research, problem-solving, and analysis through new prisms. I am indebted to Dudley Knox Library staff, most notably Greta Marlatt, and Marianne Taflinger, a CHDS research assistant, for handling my research queries and promptly assisting with formatting problems. Lauren Wollman's insights were undoubtedly instrumental in helping me to find my writing focus early on in the writing process and acted as a steadying force until I found sure footing. I am grateful for the input and constructive criticism of my thesis advisors, Eric Dahl and Patrick Miller; this thesis has greatly benefitted from their sage advice.

Of course, my efforts would not have neared fruition without the encouragement and support of my fellow cohorts. This endeavor that has spanned a year and a half was fraught with ups and downs. I am truly grateful for a wonderful group of peers who found the time to help me stay on task, even as they were struggling with their own heavy workloads.

Finally, and most importantly, I thank my family. Gabrielle, your advice, feedback, and perspective were invaluable throughout the writing process. Thank you for believing in me, and for helping me to believe in myself. To Ben, Ellie, Finn, and Tristan, I am forever in your debt for your patience and willingness to make sacrifices so that I might

realize this personal and professional goal. Your collective selflessness inspired me to find motivation and focus when it mattered most.

I. INTRODUCTION

Civil unrest throughout the United States stemming from the senseless murder of George Floyd in Minneapolis on May 25, 2020, have called into question the legitimacy of law enforcement agencies. Since Floyd’s controversial death during an arrest by police, Americans may be warming to the idea of defunding the police and reinvesting in other public services such as health and education.¹ Additionally, negative attitudes toward policing coupled with the fiscal effects of COVID-19 on metropolises have already caused New York City to eliminate almost \$1 billion dollars from the NYPD budget.² The NYPD budget cut could be a harbinger of reductions to police forces across the nation. Any reduction in police availability will increase the likelihood of fire service members responding to violent scenes without force protection. Furthermore, Ashley Southall and Neil MacFarquhar report that there was an increase in gun violence in 64 U.S. cities in 2020.³ In June alone, there were 125 shootings in New York City, 111 in Minneapolis, and 100 shot in one weekend in Chicago.⁴ The national increase in gun violence means fire sector service members are responding more frequently to shooting events. The potential for decreased police presence paired with increasing gun violence magnifies the relevance of debates surrounding firearms in the U.S. fire service.

Along with police legitimacy, the national discourse on the use of lethal force, most often associated with firearms, has also deepened. The limited space available here prohibits the careful consideration of all perspectives on the appropriate use of weapons in the name of civil service and public protection. Therefore, this research was conducted by

1. Giovanni Russonello, “Have Americans Warmed to Calls to ‘Defund the Police’?” *New York Times*, July 3, 2020, <https://www.nytimes.com/2020/07/03/us/politics/polling-defund-the-police.html>.

2. Dana Rubinstein and Jeffery C. Mays, “Nearly \$1 Billion Is Shifted from Police in Budget that Pleases No One,” *New York Times*, June 30, 2020, <https://www.nytimes.com/2020/06/30/nyregion/nypd-budget.html>.

3. Ashley Southall and Neil MacFarquhar, “Gun Violence Spikes in N.Y.C., Intensifying Debate over Policing,” *New York Times*, June 23, 2020, <https://www.nytimes.com/2020/06/23/nyregion/nyc-shootings-surge.html>.

4. “Gun Violence Spikes in N.Y.C.”

applying a traditional view: that firearms are a necessary component of many local, regional, and national programs designed to protect the public and those tasked with emergency response. Indeed, the Second Amendment grants U.S. citizens the right to keep and bear arms. Thus, various civil service agencies can reasonably articulate that firearms are necessary to secure safety of all citizens. The discussion of weapons used by police, education, and fire agencies herein presupposes those civil servants' best intentions to protect and defend the public. Perhaps Clare Farmer and Richard Evans explain it best: armed law enforcement officers (i.e., civil servants) must act within the limits of the law and follow the expectations and standards of the communities they serve.⁵ For the purposes of this discussion, it is assumed that armed police, educators, and fire sector service personnel act in the spirit of idealized framework described by Farmer and Evans.

Finally, the exclusion of literature directly related to the national debate on firearms and gun violence is intentional. A focus on the merits and flaws of the Second Amendment would prohibit a more concentrated discussion on how gun policies might affect fire organizations. The reader can and perhaps should consider how civilian gun-carry rights factor into this conversation.

A. PROBLEM STATEMENT

When and under what circumstances firefighters should carry firearms sparks fierce debate. Fire organizations encountering events involving violent actors usually delay engaging in firefighting and other critical mitigation activities at the scene until armed law enforcement arrives.⁶ These kinds of events include assaults, stabbings, conflicts with emotionally disturbed persons, mass casualty incidents, and substance abuse-related

5. Clare Farmer and Richard Evans, "Primed and Ready: Does Arming Police Increase Safety? Preliminary Findings," *Violence and Gender* 7, no. 2 (July 23, 2019): 47–56, <https://doi.org/10.1089/vio.2019.0020>.

6. Author's experience and knowledge in part from New York City Fire Department's internal document, "Interagency Response Protocol to Incidents Involving Aggressive Deadly Behavior, Fire Tactics and Procedures: Emergency Response Plan Addendum 3a."

events.⁷ As a general rule, fire personnel lack the training and equipment necessary to subdue or disarm assailants.⁸ Therefore, in the interest of first responder safety, fire professionals assume a standby position until personnel with adequate tools and preparation arrive.

Despite both civilian and firefighter deaths and injuries, as well as fire operations curtailed because of violent actors, the operational framework of the U.S. fire sector reflects ambivalence toward firearms use. John K. Murphy, an attorney and expert witness on firefighting matters, recently commented on this issue with HGExperts and concluded that the problems associated with carrying guns in the fire sector outweigh their potential usefulness.⁹ In the political arena, some public officials, including Virginia Senator Jeremy McPike, have voiced similar sentiments. Senator McPike, who is also part-time volunteer firefighter, insists that the dangers and liabilities that accompany firearms are too great to absorb.¹⁰ Nonetheless, on the national level, heightened safety concerns for fire personnel and measures taken to address both traditional and non-traditional homeland security challenges have led to various jurisdictions proposing—and in some cases enacting—legislation to allow fire sector employees to carry firearms.¹¹

7. “Fire Commissioner Nigro Announces ‘Leave Behind’ Naloxone Program,” New York City Fire Department, August 31, 2018, <http://www1.nyc.gov/site/fdny/news/fa7218/fire-commissioner-nigro-leave-behind-naloxone-program>.

8. Jennifer A. Taylor and Regan Murray, *Mitigation of Occupational Violence to Firefighters and EMS Responders* (Emmitsburg, MD: U.S. Fire Administration, 2017), 28, 55, https://www.usfa.fema.gov/downloads/pdf/publications/mitigation_of_occupational_violence.pdf. This NFPA report acknowledges the gap in EMS and firefighter training and equipment and recommends a “windshield” approach. In summary, personnel should remain in their vehicles and call for police backup when violence is expected or encountered.

9. John K. Murphy, “Firefighters Carrying Guns on the Job,” HGExperts, accessed February 20, 2020, <https://www.hgexperts.com/expert-witness-articles/firefighters-carrying-guns-on-the-job-29792>. Murphy has worked for more than 30 years as a first responder. He possesses a wealth of knowledge regarding fire and medical-related emergencies.

10. Laura Vozzella, “Virginia Senate Passes Bill Allowing Firefighters and EMTs to Carry Weapons,” *Washington Post*, January 22, 2019, https://www.washingtonpost.com/local/virginia-politics/virginia-senate-passes-bill-allowing-firefighters-and-emts-to-carry-weapons/2019/01/22/56ed8012-1e8e-11e9-9145-3f74070bbdb9_story.html.

11. “Current Events/Issues Affecting the Fire and Emergency Services,” U.S. Fire Administration, October 8, 2019, https://www.usfa.fema.gov/current_events/index.html. This source identifies several current traditional and non-traditional threats to first responders, including violence.

Three U.S. agencies tasked with promoting a safer work environment for firefighters include the Occupational Safety and Health Administration (OSHA), the National Fire Protection Agency (NFPA), and the National Institute of Occupational Safety and Health (NIOSH).¹² To date, these organizations all have declined to promote firearm use to protect fire service personnel. At the same time, all three agencies have failed to wholly reject firearms use. Lacking the guidance of these leading fire safety agencies, fire organizations across the nation have been forced to fend for themselves regarding how to consider the use of firearms.

To some, firearms appear to be an increasingly necessary tool for fire service workers throughout the United States.¹³ However, many others maintain that firearms should remain outside the purview of fire personnel.¹⁴ Further complicating matters, any number of social, political, and legal factors may lead to increased adoption of gun-carry policies by fire organizations across the nation. To enable stakeholders to make well-informed firearm policy decisions requires establishing standards for gun use in the U.S. fire sector.

B. RESEARCH QUESTIONS

What are the most relevant factors to consider when establishing firearms policies within the U.S. fire sector? What are the implications for fire organizations opting to implement gun-carry models? Can a policy options analysis offer practical gun policy

12. “OSHA Revises Publication to Protect the Safety of Firefighters,” Occupational Safety and Health Administration (OSHA), September 17, 2015, <https://www.osha.gov/news/newsreleases/trade/09172015>; “The National Institute for Occupational Safety and Health (NIOSH) Fire Fighter Fatality Investigation and Prevention Program,” Centers for Disease Control, November 22, 2019, <https://www.cdc.gov/niosh/fire/default.html>.

13. Mark McGregor, “Bethel Firefighters Carrying Weapons: Clark County Department Could Be First in Ohio to Allow Concealed Carry on Runs,” *Dayton Daily News*, April 14, 2013, <https://www.daytondailynews.com/news/bethel-firefighters-carrying-weapons/mYQnWYI4q3cEPwtaS8kJiK/>. Fire and EMS Department Chief Jacob King explains that firefighters taken hostage in Bethel, Ohio, and others ambushed in Webster, NY, led to a unanimous vote for firearms use in his jurisdiction.

14. Frumentarius, “Armed Firefighters and EMTs Are a Bad Idea,” SOFREP, April 3, 2017, <https://sofrep.com/news/armed-firefighters-and-emts-are-a-bad-idea/>; writing for the military news outlet SOFREP, under the pseudonym Frumentarius, a former Navy Seal and current firefighter argues against arming firefighters.

guidance for fire jurisdictions throughout the United States, or does the complexity of gun-carry models demand tailor-made solutions for individual fire agencies?

C. LITERATURE REVIEW

Many fire organizations throughout the United States have adopted firearms carry models in recent years. However, focused literature on this subject is limited. Thus, to form a comprehensive understanding of the issue requires examining several intersecting topics with the discussion of firearms in the fire sector. An examination of organizations such as OSHA, NIOSH, and the NFPA, which set U.S. fire sector workplace safety standards; political debates over firearms; law enforcement's relationship with guns; proposed hybrid models; and national gun violence concerns reveals that a consensus has not been reached on how to approach the convoluted problem of firearms in the fire sector.

1. Overlapping Concerns within the Law Enforcement Community

The relationship between law enforcement and firearm policies is a richly documented area that can help provide context to this exploration. For example, the Federal Bureau of Investigation (FBI), in its 2018 annual report on national law enforcement deaths, revealed that perpetrators used firearms to kill 51 of the 55 victim officers.¹⁵ The same report indicated that, geographically, officer deaths occurred throughout the United States and Puerto Rico, affecting every corner of the nation. Responding to those law enforcement deaths, The International Association of Chiefs of Police formal firearms policy mission statement stresses that firearms are necessary to safeguard the public and those who are tasked with upholding law and order.¹⁶ Nonetheless, additional FBI data collated by *Forbes* confirms that possessing a firearm and the requisite training to use it

15. "FBI Releases 2018 Statistics on Law Enforcement Officers Killed in the Line of Duty" FBI, May 6, 2019, <https://www.fbi.gov/news/pressrel/press-releases/fbi-releases-2018-statistics-on-law-enforcement-officers-killed-in-the-line-of-duty>.

16. International Association of Chiefs of Police, *Firearms Policy Position Statement* (Alexandria, VA: International Association of Chiefs of Police, 2019), [https://www.theiacp.org/sites/default/files/2019-05/IACP%20Firearms%20Position%20Paper_2018%20\(1\).pdf](https://www.theiacp.org/sites/default/files/2019-05/IACP%20Firearms%20Position%20Paper_2018%20(1).pdf).

have failed to reduce the number of armed officers killed in the line of duty for more than a decade.¹⁷

Furthermore, training alone fails to protect police officers. Remarkably, an internal study by the New York Police Department (NYPD), the largest police department in the country, revealed that police officers who regularly trained with their weapons had just an 18% accuracy rate in hitting their target during a gunfight.¹⁸ Researchers Christopher Donner and Nicole Popovich verified the NYPD study data. In addition, they explained that accuracy statistics in other U.S. cities such as Las Vegas, Philadelphia, Chicago, and Dallas have hovered between 20–50% since the 1970s.¹⁹ Donner and Popovich also caution that accurate numbers may be even lower than reported because police agencies often record when perpetrators are struck while withholding the total number of bullets discharged.²⁰

In related work, researchers Harris et al. maintain that law enforcement officers struggle with accuracy due to physiological responses that arise from situations that are hard to simulate in training.²¹ Scholar Brandon Male supported Harris et al. by demonstrating that heightened stress responses in police officers during simulated gunfights lead to lower accuracy rates.²² If this is true for highly trained law enforcement officers, how might members of the fire service fare under the immediate threat of

17. Niall McCarthy, “The Number of U.S. Police Officers Killed in the Line of Duty Increased Last Year [Infographic],” *Forbes*, May 8, 2019, <https://www.forbes.com/sites/niallmccarthy/2019/05/08/the-number-of-u-s-police-officers-killed-in-the-line-of-duty-increased-last-year-infographic/#51a4434f1189>.

18. Maureen Downey, “Cops Face Hard Time Hitting Targets in Gunfights. Can Teachers Do It?,” *Atlanta Journal-Constitution*, February 22, 2018, <https://www.ajc.com/blog/get-schooled/gunfights-trained-officers-have-percent-hit-rate-yet-want-arm-teachers/mDBlhDtV6Na4wJVpeu58cM/>.

19. Christopher M. Donner and Nicole Popovich, “Hitting (or Missing) the Mark: An Examination of Police Shooting Accuracy in Officer-Involved Shooting Incidents,” *Policing: An International Journal* 42, no. 3 (2019): 474–89, <https://doi.org/10.1108/PIJPSM-05-2018-0060>.

20. Donner and Popovich, 476.

21. Kevin R. Harris et al., “‘Gun! Gun! Gun!’: An Exploration of Law Enforcement Officers’ Decision-Making and Coping under Stress during Actual Events,” *Ergonomics* 60, no. 8 (2017): 1112–22, <https://doi.org/10.1080/00140139.2016.1260165>.

22. Brandon M. Male, “Stress Response and Performance Changes of Law Enforcement Officers’ Marksmanship under Varied Levels of Stress” (PhD diss., Northern Illinois University, 2019), ProQuest.

violence? Supplementary literature indicates that the inaccurate discharge of firearms is a widespread phenomenon, not unique to law enforcement. This examination of arming firefighters includes additional sources that consider the inherent dangers of inconsistent marksmanship, particularly that which pertains to public safety personnel.

Gun security has also proven to be problematic for law enforcement agents. According to *The Trace*, an independent nonprofit journalism outlet dedicated to gun-related news in the United States, dozens of police department–issued weapons have been lost or stolen across the nation due to error or neglect.²³ Although Philip Cook’s research concluded that there was a very modest connection between stolen guns and violent crimes, public concerns linger over the feasibility of safeguarding firearms.²⁴ Contrary to Cook’s findings, researchers Hemenway, Azrael, and Miller reported an average of 250,000 firearm thefts in the U.S. annually.²⁵ Furthermore, the study established a correlation between the number of crimes committed with illegal firearms and the volume of stolen guns that are available in the black market.

Finally, law enforcement’s issues with “friendly fire” shooting deaths should be considered. In the *New York Times*, Ali Watkins and Ashley Southhall reported that two NYPD officers were killed in 2019 by friendly fire in just seven months.²⁶ Additionally, scientific studies conducted by Munnik et al. support the ongoing threat of friendly fire.²⁷ Thus, any decision to arm firefighters could likely invite one, or perhaps several, of the same firearm risks faced by law enforcement agencies.

23. Marsha McLeod and Brian Freskos, “Law Enforcement’s Lost and Stolen Gun Problem,” *The Trace*, November 26, 2018, <https://www.thetrace.org/2018/11/lost-and-stolen-police-guns/>.

24. Philip J. Cook, “Gun Theft and Crime,” *Journal of Urban Health* 95, no. 3 (2018): 305–12, <https://doi.org/10.1007/s11524-018-0253-7>.

25. David Hemenway, Deborah Azrael, and Matthew Miller, “Whose Guns Are Stolen? The Epidemiology of Gun Theft Victims,” *Injury Epidemiology* 4, no. 1 (2017): 11, <https://doi.org/10.1186/s40621-017-0109-8>.

26. Ali Watkins and Ashley Southhall, “N.Y.P.D. Officer Was Killed by ‘Friendly Fire’ during a Struggle with Suspect,” *New York Times*, September 30, 2019, <https://www.nytimes.com/2019/09/30/nyregion/bronx-officer-brian-mulkeen-nypd.html>.

27. Annabelle Munnik et al., “The Quick and the Dead: A Paradigm for Studying Friendly Fire,” *Applied Ergonomics* 84, no. 103032 (April 2020): 1–7, <https://doi.org/10.1016/j.apergo.2019.103032>.

2. Arming Educators Stirs Comparable Deliberations

One analogous dialogue involving both the public and policymakers is the national debate regarding arming schoolteachers. Reporting for the Buckeye Firearms Association, Rob Morse revealed that the state of Ohio now has more than 1,000 school staff members trained as armed first responders.²⁸ Furthermore, *The Daily Signal*, a conservative American political news website, confirms that the Faculty/Administrator Safety Training and Emergency Response (FASTER) program used to train educators in Ohio has been adopted by 11 other states.²⁹

Despite significant support for the burgeoning FASTER program, it also has drawn its share of vocal opponents. Writing for *The Atlantic*, ex-Marine and current schoolteacher Tyler Bonin insists that arming teachers is not a solution to address gun violence in the school setting.³⁰ Bonin emphasizes that teachers would be unable to coordinate as teams during active shooter scenarios. He also cites an inability to sustain the level of training that would be required to maintain both safety and effectiveness during a school shooting event.

3. Hybrid Models

Researcher Loren Ayres was among the first advocates for combining police and fire forces; he explains that “fire emergencies create police emergencies.”³¹ Additionally, he considers whether a “[person] can be found who can master these two professions” (fire and police service) and deliver the type of emergency service that is called for in a

28. Rob Morse, “Guns and Bandages- the Changing Face of First Responders,” Buckeye Firearms Association, August 28, 2018, <https://www.buckeyefirearms.org/guns-and-bandages-changing-face-first-responders>.

29. Fred Lucas, “How This Ohio Program Trains Teachers in 12 States to Carry Guns,” *Daily Signal*, March 6, 2018, <https://www.dailysignal.com/2018/03/06/how-this-ohio-program-trains-teachers-to-carry-guns/>.

30. Tyler Bonin, “Teachers Are Not Soldiers: A Marine-Turned-Teacher Argues That It’s Impossible to Prepare Educators to Effectively Use a Gun in a Crisis,” *The Atlantic*, March 3, 2018, <https://www.theatlantic.com/education/archive/2018/03/teachers-are-not-soldiers/554783/>.

31. Loren D. Ayres, “Integration of Police and Fire Services,” *Journal of Criminal Law, Criminology, and Police Science* 47, no. 4 (November 1956): 490, <https://doi.org/10.2307/1140440>.

particular situation.³² Ayres's research illustrates a public service dilemma that has been considered for more than 60 years.

Similar to Ayers, Vinicio Mata in his 2010 Naval Postgraduate School thesis, advocates for a hybrid framework, such as the Sunnyvale, California, Department of Public Safety (DPS) model.³³ Today, the Sunnyvale DPS is the largest fully integrated department in the country. Its officers, actively trained in three disciplines of emergency response (fire, police, and EMS), can be called upon to provide any one of these services at any given time.³⁴ Mata qualifies support for this model by noting that a Department of Public Safety Model would be implemented most effectively in organizations with similar needs and resources.³⁵ However, Mata also stresses that the potential drawbacks to Sunnyvale's integrated model could discourage many fire sector agencies from considering its use. Potential obstacles and considerations identified by Mata include a) the department's unorthodox structure leads to trade-offs in longevity and experience as senior roles are often temporary; b) maintaining competency in all three disciplines can be problematic; and c) training personnel is very costly due to the necessity of preparing staff to execute three distinct roles.³⁶

However, Cynthia Vargas, another Naval Postgraduate School researcher takes a different approach in her argument for an alternative to arming firefighters.³⁷ Vargas asserts that arson investigation personnel could help address national active shooter incidents. She stresses that arson investigators possess a unique overlap of skill sets, namely, an intimate understanding of fire service emergencies and expertise as law

32. Ayres, 492.

33. Vinicio R. Mata, "The Contribution of Police and Fire Consolidation to the Homeland Security Mission" (master's thesis, Naval Postgraduate School, 2010), <http://hdl.handle.net/10945/5400>.

34. "Recruitment and Careers," City of Sunnyvale, accessed November 1, 2019, <https://sunnyvale.ca.gov/government/safety/recruitment/default.htm>.

35. Mata, "The Contribution of Police and Fire Consolidation to the Homeland Security Mission," 32.

36. Mata, 32.

37. Cynthia M. Vargas, "Tactical Firefighter Teams: Pivoting Toward the Fire Service's Evolving Homeland Security Mission" (master's thesis, Naval Postgraduate School, 2016), 116, <http://hdl.handle.net/10945/50500>.

enforcement officers. Vargas stresses that ideally, these cross-trained personnel could be leveraged to “respond as either a strike team capable of fire suppression, [as] law enforcement [for] rapid deployment to neutralize armed assault, or as a force multiplier to augment the efforts of existing rescue task forces during hostile events.”³⁸

Despite Vargas’s findings, some of the larger U.S. fire agencies, including the FDNY, leverage their fire marshal corps to perform more traditional arson investigation related functions (i.e., fire code enforcement and determining the cause and origin of fires). FDNY policies exclude fire marshals from both active shooter protocols and task force participation.³⁹ Moreover, although New York State Criminal Procedural Law grants FDNY fire marshals the full measure of police authority, their official job description alludes to the use of firearms only in support of their investigatory and arrest activity related to arson and explosions.⁴⁰

4. Gun Violence and Statistics

The Gun Violence Archive (GVA) is a watchdog organization that collates information related to the pervasive national mass casualty shooter threat. According to the GVA, from 2015 through 2018, no fewer than 335 mass shootings took place nationwide in any given year.⁴¹ This sustained volume of mass shootings indicates that firefighters will continue to be called upon to render assistance at violent incidents as pre-hospital

38. Vargas, 79.

39. Author’s experience and knowledge in part from New York City Fire Department’s internal document, “Interagency Response Protocol to Incidents Involving Aggressive Deadly Behavior, Fire Tactics and Procedures: Emergency Response Plan Addendum 3a.”

40. “Promotion to Fire Marshal (Uniformed): Notice of Examination” Department of Citywide Administrative Services, accessed April 23, 2020, <https://www1.nyc.gov/assets/dcas/downloads/pdf/noes/201404502000.pdf>.

41. “The Six Year Review,” Gun Violence Archive (GVA), accessed November 1, 2019, <https://www.gunviolencearchive.org/>. The Gun Violence Archive defines mass shootings as ones in which four or more people are killed or injured.

medical care is among most fire departments' primary, if not secondary, service responsibility.⁴²

Finally, any comprehensive analysis of firearms use in the fire service should consider data that relates to firefighter injuries and deaths, as these factors have significant influence over gun-carry policies. The most notable of these data collection organizations are 1) the National Fire Protection Association (NFPA), considered the leading national information resource for fire-related hazards; 2) the United States Fire Administration (USFA), the principal federal agency for national fire data collection, fire research, and fire service training; and 3) the International Public Safety Association (IPSA), which advocates accurate record-keeping through the use of the National Fire Incident Reporting System (NFIRS).⁴³

Although these agencies have recorded firefighter injuries and deaths attributed to violence for decades, the overwhelming majority of their reports indicate that violence as a cause of death or injury is more of an aberration than a typical occurrence. Nonetheless, in 2019, CNN reported that Florida Governor Ron DeSantis signed legislation into law allowing firefighters to carry firearms while on duty, joining states such as Kansas and Ohio, which already have similar laws in place.⁴⁴ The news outlet also explained that like-minded legislation has been proposed in Tennessee, Mississippi, and Virginia.⁴⁵

42. Monica Eng, "Why Send a Firetruck to Do an Ambulance's Job?," National Public Radio, April 11, 2017, <https://www.npr.org/sections/health-shots/2017/04/11/523025987/why-send-a-firetruck-to-do-an-ambulances-job>.

43. "NFPA," National Fire Protection Association, accessed April 24, 2019, <https://www.nfpa.org/>; Karyl Kinsey and Marty Ahrens, "NFIRS Incident Types: Why Aren't They Telling a Clearer Story?" NFPA, January 2016, <https://www.nfpa.org/-/media/Files/News-and-Research/Fire-statistics-and-reports/Emergency-responders/osNFIRSIncidentType.ashx?la=en>; "Home," International Public Safety Association, accessed June 4, 2020, <https://www.joinipsa.org/>. The long-standing history of the National Fire Protection Association (NFPA) and USFA is presented to verify the legitimacy of both agencies. The NFPA is a global self-funded nonprofit organization devoted to eliminating death, injury, property, and economic loss due to fire, electrical, and related hazards. NFIRS is the national firefighting industry standard for fire incident reports and notoriously inexact.

44. Amir Vera, "New Law Lets Paramedics in Florida Be Armed in 'High-Risk Incidents,'" CNN, June 10, 2019, <https://www.cnn.com/2019/06/10/us/florida-armed-ems/index.html>.

45. Vera, "New Law Lets Paramedics in Florida Be Armed in 'High-Risk Incidents.'"

Presently, there is no agreement among U.S. policymakers, stakeholders, or legislative bodies as to how fire service gun policy decisions should be made. This literature is presented as a means of addressing the absence of more specific, dedicated sources that should be available to help guide fire agencies as they pursue sensible policies for their organizations. The literature selected represents deep wells of research with ties to public safety, existing gun-carry models, and ongoing debates over the need for firearms in the fire sector. The avenues explored here do not encompass every nuanced aspect of this dilemma; however, an examination of these sources should serve as a starting point for a thoughtful and relevant analysis meant to promote a deeper understanding of the issue.

D. RESEARCH DESIGN

First, an evaluation of the law enforcement and school safety sector relationships with firearms will help identify some of the challenges that stem from the creation of firearms policies. Some of these issues include accuracy concerns, gun security dilemmas, and friendly fire deaths and injuries. Since U.S. law enforcement entities have had a relationship with firearms dating back to 1857, a consideration of law enforcement concerns will be based on nearly 160 years of experience.⁴⁶ In contrast, a study of the relatively new school safety sector will help to identify emerging problems created by the decision to arm teachers, another traditionally unarmed segment of public service employees. The exploration of firearm carry policies in schools will focus on costs, safety concerns, and the public and political pressures being exerted to either promote or denounce the incorporation of firearms into the school setting.

Next, three options for the U.S. fire sector gun-carry policies will be reviewed to illustrate the efficacy of different models in use throughout the country. For example, the Fire Rescue Authority in Loveland, Colorado, has been using armed firefighters effectively on tactical teams since 2007.⁴⁷ Also, the Sunnyvale Department of Public Safety has

46. "Important Dates in Law Enforcement History," National Law Enforcement Officers Memorial Fund, March 31, 2019, <https://nleomf.org/facts-figures/important-dates-in-law-enforcement-history>.

47. "Fire Rescue Services," Loveland Fire Rescue Authority, accessed August 24, 2020, <https://lfra.org/our-services/fire-suppression-operations/fire-suppression-services/>.

functioned as a fully integrated police, fire, and EMS force since 1950.⁴⁸ Lastly, recently enacted legislation in Texas, Florida, and Kansas now permits firefighters and firefighter/paramedics to carry concealed firearms. The value of these three models can be inferred from their adoption and continued use by many U.S. fire agencies across the nation. Overall, these models appear to meet the basic needs of numerous fire organizations and the communities they serve. A comparison of the models' strengths and weaknesses might reveal the conditions under which a particular framework may flourish or fail.

Metrics used to evaluate these models are 1) the financial cost of firearms training, procurement, and maintenance; 2) the response times of fire agencies to violent events as they relate to patient outcomes; and 3) the measurable challenges of urban departments versus those faced by rural communities (i.e., population density, size of response areas, resources available such as funding and manpower). The variables selected for consideration were chosen due to their relevance to governmental budgets, which impact all policy decisions; public demands for rapid intervention at violent events; and an understanding that first responder needs may vary greatly in urban versus rural settings throughout the country. These criteria are only suggested metrics based on their ties to safety issues and their ability to be reasonably quantified. The author concedes that other parameters may be useful in future considerations of this topic when used independently or in conjunction with those studied here.

Finally, both stakeholder and decision-maker stances will be studied to provide sensible gun policy options for the U.S. population, which has demonstrated inconsistent tolerances for gun-carry legislation. The aim of research conducted here might be best described by educators Michael Kraft and Scott Furlong, authors of *Public Policy: Politics, Analysis, and Alternatives*.⁴⁹ The authors explain that “at heart, policy analysis encourages deliberate critical thinking about the causes of public problems, the various ways

48. Alexandra Berg, “Sunnyvale: Making Police and Fire Services Interchangeable,” California Forward (CA Fwd), January 17, 2013, <https://cafwd.org/reporting/entry-new/sunnyvale-making-police-and-fire-services-interchangeable>.

49. Michael E. Kraft and Scott R. Furlong, *Public Policy: Politics, Analysis, and Alternatives*, 7th ed. (Thousand Oaks, CA: CQ Press, 2019).

government or the private sector might act on them, and/or which policy choices make the most sense.”⁵⁰ Furthermore, in their book *A Practical Guide for Policy Analysis: The Eightfold Path to More Effective Problem Solving*, educators and authors Eugene Bardach and Eric Patashnik stress that policy analysis begins and ends with politics.⁵¹ Thus, it is logical to include the consideration of political attitudes toward firearms in the fire service in any policy analysis. Barring a consensus on one national standard for a firearm carry policy, the creation of a comprehensive, iterative evaluation framework for firearms use will allow fire organizations to make better-informed decisions regarding the adoption or rejection of force protection models

50. Kraft and Furlong, 10.

51. Eugene Bardach and Eric M. Patashnik, *A Practical Guide for Policy Analysis: The Eightfold Path to More Effective Problem Solving*, 6th ed. (Thousand Oaks, CA: CQ press, 2019), xviii.

II. COMPARISON OF FIREARMS IN LAW ENFORCEMENT AND EDUCATION

A. LAW ENFORCEMENT HISTORY AND PROBLEMS

This thesis's primary focus is to consider the most relevant factors that might help lead to the creation of sensible firearms policies for fire sector agencies. Searching for gun policy templates outside of the U.S. fire service led to comparisons with two civil service sectors (law enforcement [LE] and education) that each enjoy unique relationships with firearms strategies. A look at U.S. LE firearms protocols offers more than a century and a half of history and a wealth of gun-related data. Conversely, recently enacted and emerging gun policies in the U.S. education sector are attempting to solve the modern problem of school shooting events, most often occurring in the absence of traditional LE entities. An analysis of shared concerns and some distinctive issues of these sectors will frame the foundation of this discourse.

1. Law Enforcement Agencies' Attempt to Standardize Weapons Programs

Any decision to arm firefighters would involve confronting perennial issues that have troubled U.S. law enforcement agencies since 1857, when Baltimore, Maryland, became the first U.S. city to issue police pistols.⁵² Among these challenges are accuracy concerns, gun security issues, and friendly fire deaths and injuries. The upshot of these well-documented problems is that fire agencies can benefit from over 150 years of firearms policy revisions and improvements. However, recurrent dialogues about gun policy problems suggest that definitive solutions remain elusive. In either case, the exploration of firearms in law enforcement can provide a richer context for productive analysis.

In 1895, then New York City police commissioner and future U.S. President Theodore Roosevelt identified inconsistencies in U.S. law enforcement firearms protocols. At that time, LE agencies across the country allowed officers to carry a variety of weapons,

⁵². National Law Enforcement Officers Memorial Fund, "Important Dates in Law Enforcement History."

and they lacked a uniform manufacturer or caliber. As a result, Roosevelt ordered 4,500 Colt .32 caliber 6 round revolvers for the NYPD, making the department the first U.S. law enforcement agency to standardize weapons and ammunition as a means of improving both firearms training and marksmanship.⁵³ By 1900, many large departments had followed suit. The first half of the 20th century witnessed the commonplace acceptance of homogenized firearms in U.S. law enforcement entities.

Lt. Colonel (Ret) Mike Wood is an NRA certified LE firearms instructor who rejects the notion of standardization of firearms and firearms training.⁵⁴ Wood contends that past common LE standards for gender, height, and weight no longer apply, making uniform equipment and training a less sensible approach today.⁵⁵ In fact, Donald Mihalek, the executive director of the Federal Law Enforcement Officers Association, emphasizes that half of the nation's ten largest law enforcement agencies currently allow several on-duty firearm options for their officers.⁵⁶ Additionally, Graham Kates reports that the length and type of U.S. LE firearms training programs vary greatly, ranging from just ten weeks to 36 weeks.⁵⁷ Clearly, U.S. LEOs have not yet agreed upon best practices for firearms issuance or training methodologies.

The preliminary information related to LE agencies indicates that fire agencies will have to make some difficult choices if they wish to implement firearms programs. Fire organizations will have to decide between the legacy approach to standardized weapons and weapons training and a newer format providing an array of firearms and a menu of

53. Scott Dylan, "Police Sidearms: From Past to Present," Pew Tactical, February 11, 2017, <https://www.pewpewtactical.com/police-sidearms-past-present/>.

54. Mike Wood, "Why Firearms Standardization Puts Police Officers at Risk," Police1, October 16, 2017, <https://www.policeone.com/police-products/firearms/training/articles/why-firearms-standardization-puts-police-officers-at-risk-7VIpYZBAhC62fvtv/>.

55. Wood, "Why Firearms Standardization Puts Police Officers at Risk."

56. Donald J. Mihalek, "Police Sidearms: The Handguns of America's 10 Largest Departments," *Tactical Life Gun Magazine: Gun News and Gun Reviews*, May 18, 2018, <https://www.tactical-life.com/firearms/handguns/largest-departments-police-sidearms/>.

57. Graham Kates, "Some U.S. Police Train for Just a Few Weeks, in Some Countries, They Train for Years," WBTV, June 13, 2020, <https://www.wbvtv.com/2020/06/13/some-us-police-train-just-few-weeks-some-countries-they-train-years/>.

weapons training options. Smaller fire agencies and those with limited financial resources will likely have to opt for less expensive firearms outfitting options (i.e., a one model gun system). Newer, multi-weapon options programs may prove too complicated and cost-prohibitive for many departments. Finally, fire sector decision-makers need to consider the added expenses associated with broader training programs against potential drawbacks of one size fits all firearms programs. Leaner firearms training programs that satisfy budgets may lead to sacrifices in accuracy due to mismatches between personnel and either their equipment or training.

2. Firearms Accuracy: Training and Qualification versus Proficiency

Researchers Gregory Morrison and Bryan Vita contend that for decades after the turn of the 19th century, U.S. law enforcement training programs languished as they universally focused on training in the use of firearms versus adopting firearms qualification standards.⁵⁸ They stress that the nomenclature (training versus qualification) is more than a matter of semantics, insisting that qualification implies a level of rigor and expertise that exceeds a mere familiarity with firearms. Varg Freeborn agrees with Morrison and Vita's assertions, yet he adds one caveat—that neither training nor qualification are equivalent to actual gun proficiency.⁵⁹

Jason Wuestenberg, the executive director of the National Law Enforcement Firearm Instructors Association (NLEFIA), further argues that liability concerns have led LE agencies to promote the concept of firearms qualifications instead of stressing comprehensive weapons competence. Although Michael Charles and Anne Copay demonstrated that basic law enforcement marksmanship courses dramatically improve shooting accuracy, some critics of LE firearms policies insist that an array of statistics

58. Gregory B. Morrison and Bryan J. Vila, "Police Handgun Qualification: Practical Measure or Aimless Activity?," *Policing: An International Journal of Police Strategies & Management* 21, no. 3 (January 1, 1998): 510–33, <https://doi.org/10.1108/13639519810228804>.

59. Varg Freeborn, "The Difference Between 'Qualification' and 'Training'," Buckeye Firearms Association, March 6, 2015, <https://www.buckeyefirearms.org/difference-between-qualification-and-training>.

prove otherwise.⁶⁰ Researchers and firearms experts continue to debate whether qualification standards prepare armed personnel for interactions with bad actors.

There is a general understanding that U.S. LEOs who carry firearms require training. Nonetheless, questions remain: Do LE industry labels such as “trained” and “qualified,” designed to diminish liability and assuage public fears, cause LE agencies to forgo their responsibility to prepare officers for field use of firearms? Are qualification goals tantamount to bare minimum standards? Do typical gun range standards translate appropriately to life and death firearm encounters? How valid are gun qualifications that take place under controlled conditions? What path can fire agencies take to avoid wasting resources on inadequate training programs? How can fire agencies set effective training policies that will meet or exceed the best law enforcement programs?

Fire service organizations should identify law enforcement agencies with the most reliable training records and firearms discharge statistics. However, this may prove to be an arduous task as, Duren Banks reports, there are roughly 18,000 federal, state, and local law enforcement agencies in the United States.⁶¹ Banks adds that verifying the actual number of departments is nearly impossible because individual departments are often found in remote localities.⁶² Fire sector stakeholders must remember that they can choose from a vast number of law enforcement models. Only those departments with exceptional reputations and verifiable safety data should be considered for potential use as training templates.

3. Rare Use of Weapons and Missing the Target

Contrary to persistent television and movie depictions of police protagonists discharging firearms with pinpoint accuracy, most LEOs rarely fire a weapon in the line of

60. Michael T. Charles and Anne G. Copay, “Acquisition of Marksmanship and Gun Handling Skills through Basic Law Enforcement Training in an American Police Department,” *International Journal of Police Science & Management* 5, no. 1 (March 1, 2003): 16–30, <https://doi.org/10.1350/ijps.5.1.16.11245>.

61. Duren Banks et al., *National Sources of Law Enforcement Employment Data*, NCJ 249681, (Washington, DC: Bureau of Justice Studies, April 2016), 17. <https://www.bjs.gov/content/pub/pdf/nsled.pdf>.

62. Banks et al., 1.

duty. In a 2017 study, Morin and Mercer reported that although 83% of Americans polled believed that all LEOs fire their sidearms at least once in their careers, the actual number is just 27%.⁶³ Additionally, on the rare occasions that officers draw their service weapons, they often fail to hit their mark. The NYPD reported that their police officers were only accurate 18% of the time in gunfights, and this phenomenon is common throughout U.S. police departments.⁶⁴ Jennifer Smith Richards et al. revealed that a six-year study of the Chicago Police Department (CPD) demonstrated similar results—roughly a 16% accuracy rate.⁶⁵ Moreover, Donner and Popovich determined that anemic marksmanship has been prevalent in the Las Vegas, Philadelphia, and Dallas police departments since the 1970s, with an accuracy range of 20–50% for five decades running.⁶⁶

Kevin Harris et al. explain that LEOs engaged in gunfights experience physiological responses, which typically reduce firearm accuracy rates.⁶⁷ Brandon Male’s research supports Harris et al. and further demonstrates a link between low LEO hit rates and amplified stress responses experienced by officers during simulated gunfights.⁶⁸ Additionally, David Blake and Edward Cumella stress that LEOs’ memory, reaction times, and judgment are adversely impacted by routine lack of sleep associated with irregular shift schedules.⁶⁹ Because of these issues, the U.S. fire service sector decision-makers should

63. Andrew Mercer and Rich Morin, “Police Officers Who Have Fired a Gun on Duty: A Closer Look,” Pew Research Center, February 8, 2017, <https://www.pewresearch.org/fact-tank/2017/02/08/a-closer-look-at-police-officers-who-have-fired-their-weapon-on-duty/>.

64. Downey, “Cops Face Hard Time Hitting Targets in Gunfights. Can Teachers Do It?”

65. Jennifer Smith Richards et al. “92 Deaths, 2,623 Bullets: Tracking Every Chicago Police Shooting over 6 Years,” *Chicago Tribune*, August, 26. 2016, <https://www.chicagotribune.com/investigations/ct-chicago-police-shooting-database-met-20160826-story.html>.

66. Donner and Popovich, “Hitting (or Missing) the Mark,” 476.

67. Kevin R. Harris et al., “ ‘Gun! Gun! Gun!’: An Exploration of Law Enforcement Officers’ Decision-Making and Coping under Stress during Actual Events,” *Ergonomics* 60, no. 8 (2017): 1112–22, <https://doi.org/10.1080/00140139.2016.1260165>.

68. Male, “Stress Response and Performance Changes of Law Enforcement Officers’ Marksmanship,” 32.

69. David Blake and Edward Cumella, “Factoring Fatigue into Police Deadly Force Encounters: Decision-Making and Reaction Times,” *Law Enforcement Executive Forum* 15 (March 15, 2015), <https://doi.org/10.19151/LEEF.2015.1501d>.

consider the perils of both stress and sleep deprivation as they relate to firearm accuracy. Police and fire personnel share the burden of unpredictable sleep patterns and the demands of emergency response. Moreover, were they armed, fire service professionals would not be immune to the myriad physiological stress responses that police cope with during officer-involved shooting (OIS) events.

If only 27% of LEOs fire a weapon just once in their career, how often would firefighters be called upon to draw a gun? If LEOs have difficulty controlling physiological reactions and hitting targets, how can fire agencies expect personnel to perform any better? Fire agencies should not look past this valuable information. Some stakeholders argue that even one prevented death is worth the liabilities that come along with carrying sidearms. This assertion is debatable and needs to be measured against hard data and scientific evidence that demonstrate confirmed problems tied to carrying firearms.

4. Gun Security Problems

Gun security is another problem that has plagued law enforcement agents. Scores of police department-issued weapons have been lost or stolen across the United States due to oversight or blatant negligence.⁷⁰ Additionally, violent actors have taken weapons from armed officers and subsequently used them in the commission of crimes. For example, in 2018, Police Officer Michael Chesna of the Weymouth Police Department in Massachusetts and Police Officer Michael Adam Jobbers-Miller of the Fort Meyers Police Department were both murdered with their own firearms after perpetrators took control of their weapons.⁷¹

Safe gun storage, inside and outside of the workplace, is yet another factor to consider. Although the Protection of Lawful Commerce Act of 2005 prohibits the sale or transfer of handguns without a gun storage or safety device, usage of said interventions is

70. McLeod and Freskos, "Law Enforcement's Lost and Stolen Gun Problem."

71. Tim Stelloh, "Massachusetts Police Officer Was Shot 10 Times with His Own Gun," NBC News, July 31, 2018, <https://www.nbcnews.com/news/us-news/massachusetts-police-officer-was-shot-10-times-his-own-gun-n891846>.

unclear beyond the point of sale.⁷² According to a study conducted by T. Coyne-Beasley and R.M. Johnson, more than two-thirds of 200 LEOs surveyed admitted that they did not comply with safekeeping standards. Additionally, more than half of the officers believed that there should be no requirement for gun locks for stored firearms.⁷³ This information is alarming as Giffords Law Center reports that 70–90% of suicides, unintentional shootings, and school shootings by youths involve firearms that are accessed either from inside the home or inside the homes of friends and relatives.⁷⁴

There is a general agreement that gun safes, trigger locks, and cable mechanisms can prevent the unauthorized use of firearms. However, these precautions are often met with resistance because they hinder access to weapons or impede immediate use. Delays in access to personal weapons push many toward unsafe practices.

Fire service organizations need to plan for the reality of uneven compliance with gun storage policies. Furthermore, fire agencies should educate their employees regarding suicides, unintentional discharges, and the dangerous mixture of poor storage practices and minors in the home. A policy of mandatory firearm storage at gun lockers located within fire department facilities could help eliminate the concern for home storage entirely.

5. Dangers of Friendly Fire and Unintentionally Discharged Weapons

Another somewhat rare yet recurring tragedy in OISs is the phenomenon of friendly fire accidents. Some of these errors lead to injury, while others have led to a loss of lives. Watkins and Southall observed that two NYPD officers were killed by friendly fire in 2019 alone.⁷⁵ Studies conducted by Munnik et al. support the cause for concern over friendly

72. “S.397 - Protection of Lawful Commerce in Arms Act,” Congress.gov, accessed April 22, 2020, <https://www.congress.gov/bill/109th-congress/senate-bill/397/text>.

73. T. Coyne-Beasley and R. M. Johnson, “Law Enforcement Officers’ Opinions about Gun Locks: Anchors on Life Jackets?,” *Injury Prevention* 7, no. 3 (September 1, 2001): 200–204, <https://doi.org/10.1136/ip.7.3.200>.

74. “Safe Storage,” Giffords Law Center, accessed August 26, 2020, <https://lawcenter.giffords.org/gun-laws/policy-areas/child-consumer-safety/safe-storage/>.

75. Watkins and Southall, “N.Y.P.D. Officer Was Killed by ‘Friendly Fire’ during a Struggle with Suspect.”

fire incidents.⁷⁶ They argue that cognitive overloads that are commonplace at high-stress lethal force events impact LEO judgment and add that attempts to be fast on the draw increase the chances of friendly fire accidents.

Friendly fire calamities are not the only burden that comes along with gun ownership. According to an FBI 2019 report, nine officers were accidentally shot between 2015 and 2020.⁷⁷ Some noted causes of unintentional discharges were firearm cleaning mishaps, tactical training mistakes, arrest performance miscues, and unintended shootings while on patrol. Unintentional firearm discharges occur throughout the country and appear to have no universal causation.

The responsibilities that come with carrying a gun run broad and deep. Fire service organizations cannot ignore the myriad safety implications that come along with gun-carry programs. Law enforcement injuries and deaths attributable to firearms continue to occur despite office firearms training, and established storage practices. Fire organizations opting to arm their firefighters must decide if they have better answers to these perennial problems or accept these dangers as the cost of providing what they may judge to be an essential service.

B. FIREARMS IN THE SCHOOL SETTING

In contrast to the longstanding tradition of armed LEOs in the United States, arming teachers on a broad scale is a very new endeavor. Since teachers (like firefighters) are traditionally unarmed civil service workers and because policies to arm teachers are new, the fire service might identify more closely with educators than they do with LEOs. The examination of firearms usage in law enforcement has demonstrated that there is ample room for policy improvements. Thus, it is sensible for fire agencies to look beyond law enforcement policies and consider how the field of education integrates firearms into the workplace.

76. Munnik et al., “The Quick and the Dead,” 1–7.

77. Federal Bureau of Investigation, “FBI Releases 2019 Statistics on Law Enforcement Officers Killed in the Line of Duty.”

1. History of Guns in School and the Watershed Moment of 2007

National legislation—namely the Gun Free School Zones Act of 1990—makes it illegal to possess firearms both inside of schools and within the vicinity of school grounds.⁷⁸ However, this does not apply to those who have conceal carry permits unless expressly prohibited by local legislation.⁷⁹ This loophole creates potential problems for LEOs, teachers, and first responders as there is no telling which adults are armed inside a school at any given moment. Additionally, many argue that advertising schools as gun-free zones emboldens some who might harm students and school staff. In response to the hazards created by the concealed carry carve out, more than half of the states in the U.S. have passed laws prohibiting concealed carry practices in schools.⁸⁰ Nonetheless, 24 other U.S. states currently allow school districts to authorize individuals to carry firearms.⁸¹

The Gun Free School Zone Act is a double-edged sword because it allows both civilians and teachers with conceal carry permits to exercise their constitutional right to bear arms in school settings. Currently, there is a nearly even national division between those states who find firearms to be an appropriate means of protection in schools and those who reject the idea. Fragmented sponsorship of gun programs suggests that fire sector agencies hoping to gather public backing for weapons programs may find that support is lacking in a majority of the country. Furthermore, even those states that sanction conceal carry policies leave the final decisions of weapons legality in the hands of individual school districts. Fire agencies hoping to implement firearms programs will likely find that they

78. The Gun Free School Zones Act of 1990 defines a School Zone as any area located within 1,000 feet of school property. “S.2070 - Gun-Free School Zones Act of 1990,” Congress.gov, accessed September 4, 2020, <https://www.congress.gov/bill/101st-congress/senate-bill/2070/text>. 25B.

79. Congress.gov, “S.2070 - Gun-Free School Zones Act of 1990.”

80. “Guns in Schools: State by State,” Giffords Law Center to Prevent Gun Violence, accessed October 5, 2020, <https://lawcenter.giffords.org/gun-laws/state-law/50-state-summaries/guns-in-schools-state-by-state/>.

81. Kayla Dwyer, “Guns in School? Here’s a List of States That Allow Armed Teachers,” *The Morning Call*, February 14, 2019, <https://www.mcall.com/news/education/mc-nws-guns-in-schools-list-20181108-story.html>.

must gain both state *and* local backing before moving forward with any plans to arm personnel.

Before 2007, the precise history of armed teachers in the United States is somewhat murky. School shooting incidents and violence intervention conversations had been well-documented since the Columbine, Colorado, massacre of April 20, 1999. However, it was not until 2007 that the Harrold Wilbarger County School District of Texas enacted the first modern gun policy for armed teachers.⁸² The impetus for the policy change was a mass school shooting just one year earlier at the West Nickel Mines School in Pennsylvania.⁸³ On October 6, 2006, a one-room Amish schoolhouse became the scene of a mass casualty incident (MCI) as five young girls perished at the hands of a lone gunman. Proponents of the Wilbarger armed teacher model, including school Wilbarger Superintendent David Thweatt, were moved by the mass shooting in Pennsylvania and feared a similar event could occur given that they were a 30-minute drive away from their own sheriff's office.⁸⁴ Other high-profile school shootings such as Virginia Tech , Sandy Hook Elementary , and Marjory Stoneman Douglas High School to name just a few, forced further school gun safety conversations.⁸⁵

Justified public outrage over mass shootings coupled with the fear of victimization has led to an expansion of teacher carry policies to more than 20 U.S. states since 2007. This growth suggests that there is an emerging public tolerance for arming teachers as a means of protecting students. The implication here is that fire agencies might expect similar

82. Arlinda Smith Broady, "Locked & Loaded: Inside a Georgia School District with Armed Teachers," *Atlanta Journal-Constitution*, March 28, 2019, <https://www.ajc.com/news/locked-loaded-inside-georgia-school-district-with-armed-teachers/Gz9OTHY03cNDfuSgrDJqiM/>.

83. David Kocieniewski and Gary Gately, "Man Shoots 11, Killing 5 Girls, in Amish School," *The New York Times*, October 3, 2006, under sec. U.S., <https://www.nytimes.com/2006/10/03/us/03amish.html>.

84. Associated Press, "Teachers in Texas District Get Approval to Carry Guns," *Daily News*, August 16, 2008, <https://www.dailynews.com/20080816/teachers-in-texas-district-get-approval-to-carry-guns>.

85. The Virginia Tech tragedy claimed 32 victims on April 16, 2007; the Sandy Hook shooting on December 14, 2012, ended with 27 casualties; and 17 died the Marjory Stoneman Douglas High School attack. "Mass Shootings in the U.S. Facts," CNN, accessed January 17, 2021, <https://www.cnn.com/2019/08/19/us/mass-shootings-fast-facts/index.html>.

support for gun policies as long as the public perceives school shootings to be an ongoing threat.

2. Public Divide: Those in Favor and Those Opposed

Ohio is one state that appears to be in the vanguard of the most popular firearms policy for U.S. classrooms. Rob Morse reports that Ohio has trained more than 1,000 school staff members as armed first responders.⁸⁶ Fred Lucas affirms Morse's figures and further explains that 11 additional states have embraced Ohio's Faculty/Administrator Safety Training and Emergency Response (FASTER) program.⁸⁷ It is worth noting that in the absence of uniform national gun policies for educators, many school districts seem to have quietly agreed to current best practices of their own accord. However, not everyone can agree that gun training is a prudent measure.

Notwithstanding significant support for the prospering FASTER program, those opposed to firearms in classrooms insist that arming teachers is a poor decision that may have grave consequences. Tyler Bonin, a former Marine and current schoolteacher, contends that armed teachers are not a solution to gun violence in educational settings.⁸⁸ Bonin stresses that teachers would be unable to coordinate efficiently during active shooter incidents. He also doubts that teachers will be able to sustain the training necessary to ensure safety and effectiveness during active shooter events. Rogers et al. have deeper safety concerns. These include the obvious life hazard guns pose, emotional impacts on the students that teachers care for, and the potential for improper firearm storage.⁸⁹ Finally,

86. Rob Morse, "Guns and Bandages—The Changing Face of First Responders," Buckeye Firearms Association, August 28, 2018, <https://www.buckeyefirearms.org/guns-and-bandages-changing-face-first-responders>.

87. Fred Lucas, "How This Ohio Program Trains Teachers in 12 States to Carry Guns," *Daily Signal*, March 6, 2018, <https://www.dailysignal.com/2018/03/06/how-this-ohio-program-trains-teachers-to-carry-guns/>.

88. Tyler Bonin, "Teachers Are Not Soldiers: A Marine-Turned-Teacher Argues That It's Impossible to Prepare Educators to Effectively Use a Gun in a Crisis," *The Atlantic*, March 3, 2018, <https://www.theatlantic.com/education/archive/2018/03/teachers-are-not-soldiers/554783/>.

89. Melanie Rogers et al., "Is Arming Teachers Our Nation's Best Response to Gun Violence? The Perspective of Public Health Students," *American Journal of Public Health* 108, no. 7 (June 6, 2018): 862–63, <https://doi.org/10.2105/AJPH.2018.304477>.

New York Governor Andrew Cuomo is another highly visible opponent of gun-carry policies for educators. Michael Gold reported that Cuomo publicly denounced proposed gun policies, stressing that more weapons will never answer the problem of gun violence.⁹⁰

3. School Gun Safety and Security

Gun safety and security are two critical areas of concern for educators. In considering these factors, there is a significant overlap with the previously discussed law enforcement sector. Hannah Batsche comments that fears of stolen weapons, accidental discharges, and innocent bystander shootings must be addressed before gun programs are introduced into the school setting.⁹¹ Todd DeMitchell and Christine Rath add that firearms affect schools in the following ways: 1) teachers' roles are altered/compromised by adding a security component to their suite of responsibilities; 2) liabilities increase; 3) the presence of more guns boosts the probability of mishaps; and 4) determining if an armed adult is a friend or foe could prove problematic.⁹²

Thus far, none of the worst fears expressed by politicians and pundits who condemn the use of firearms in schools have come to pass. John Lott has collated national data on armed teacher programs, and the results are surprising.⁹³ Since January 2000, there has not been one report of someone being wounded or killed between 6 a.m. and midnight in a school that allows firearms.⁹⁴ Additionally, there have been no firearm thefts and only one

90. Michael Gold, "Teachers Barred From Carrying Guns in New York Schools," *New York Times*, July 31, 2019, under sec. A, <https://www.nytimes.com/2019/07/31/nyregion/guns-schools-ban-teachers-ny.html>.

91. Hannah Batsche, "School Safety: The Industry Shootings Has Created and What We Can Do to Protect Our Children Featured Practice Perspectives: Education Connection," *Children's Legal Rights Journal* 39, no. 2 (2019): 208–12.

92. Todd A DeMitchell and Christine C Rath, "Armed and Dangerous—Teachers? A Policy Response to Security in Our Public Schools," *Brigham Young University Education and Law Journal* 2019, no. 1, (Spring 2019): 63–93.

93. John R. Lott, "Schools That Allow Teachers to Carry Guns Are Extremely Safe: Data on the Rate of Shootings and Accidents in Schools That Allow Teachers to Carry," accessed June 12, 2020, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3377801

94. Lott, "Schools That Allow Teachers to Carry Guns Are Extremely Safe."

unintentional discharge (that did not lead to an injury) was noted.⁹⁵ These figures stand in stark contrast to the seemingly regular occurrence of law enforcement mishaps.

It appears that the education sector is finding success where law enforcement has failed. The safety data suggests that fire agencies should emulate education sector practices rather than follow law enforcement methodologies. Fire departments hoping to gain political and public support for arming personnel will have a smoother path if they can demonstrate a commitment to the safest practices. At present, school sector safety plans represent the ideal model for the fire service.

4. Monetary and Intangible Costs of Arming and Training Teachers

Regardless of arguments based on political leanings (i.e., pro firearm versus anti-firearm stances or decisions that may be swayed by the emotional nature of mass shootings in schools) the economic feasibility of arming teachers must be considered. Yuval Rosenberg insists that arming 20% of U.S. teachers (as suggested by President Donald J. Trump) could cost as little as \$71.8 million for basic training to as much as \$718 million for the aforementioned FASTER training widely used in Ohio (\$1,000 per person).⁹⁶ Furthermore, the firearms themselves would cost roughly \$360 million (\$500 per unit) along with other added costs such as ammunition and uncertain insurance fees.⁹⁷ The initial costs do not appear to be unreasonably high, yet there are also intangible factors to be debated.

Teachers play supportive mentorship roles in students' lives. Mutual trust and respect flow naturally from these relationships. To what extent might firearms weaken those bonds? Do students view the introduction of weapons into the classroom as a supportive measure, or rather do they see it as a breach of trust and a stressful reminder of pervasive gun violence in the school settings? DeMitchell and Rath insist that conventional

95. Lott, "Schools That Allow Teachers to Carry Guns Are Extremely Safe."

96. Yuval Rosenberg, "How Much Would It Cost to Arm Teachers as Trump Proposed?" *The Fiscal Times*, February 22, 2018, <http://www.thefiscaltimes.com/2018/02/22/How-Much-Would-It-Cost-Arm-Teachers-Trump-Proposed>.

97. Rosenberg, "How Much Would It Cost to Arm Teachers as Trump Proposed?"

safety policies such as security camera installation, metal detector use, and school safety officer presence only lead to increased feelings of insecurity and anxiety among students.⁹⁸ Danielle Weatherby concurs with the viewpoints of DeMitchell and Rath but adds that the presence of guns cause a loss of focus on education, confusing teachers' roles by forcing them to straddle the line between security and instruction.⁹⁹

How then should we interpret the cost of arming firefighters? It appears as though the process will come with two price tags. The first is easy to compute: a \$500 firearm, a \$1000 training program, and perhaps an additional \$500–\$1000 worth of incidental expenses per person (ammunition, storage, insurance costs, etc.). The second price tag is likely to be exponentially higher. What is the trust of a community worth? How can value be placed on the public goodwill firefighters enjoy? Is the increased ability to protect the public worth the change in image and operational dynamics? Fire agencies need to answer these queries before they move forward with gun policies.

5. Opting Out: Unwillingness to Participate

Notwithstanding public debates and safety concerns, perhaps the most overlooked detail of teacher gun-carry policies is calculating teachers' willingness to participate. Batsche stresses that a 2018 National Education Association poll of 1,000 educators revealed that 82% of teachers would refuse to carry a firearm—even if guns were deemed legal and teachers were given the requisite training.¹⁰⁰ An enthusiasm for gun policies among all civil servants should not be assumed.

Brian Hupp, an EMS director and former assistant fire chief, claims that firearms have no place in prehospital emergency medical care and resists any suggestion that they would improve dangerous encounters, including those where armed assailants are

98. DeMitchell and Rath, "Armed and Dangerous—Teachers?," 67.

99. Danielle Weatherby, "Opening the Snake Pit: Arming Teachers in the War against School Violence and the Government-Created Risk Doctrine," *Connecticut Law Review* 48, no. 1 (2015): 119–76.

100. Batsche, "School Safety," 210.

present.¹⁰¹ Before fire agencies start to fight for the right to carry firearms, it seems that they should consider the level of cooperation that they might expect from their employees.

C. CONCLUSION

More than 160 years have passed since the first U.S. police department issued official firearms. Nonetheless, the passage of time has not eliminated significant weapons issues for law enforcement agents. Experts within the law enforcement community still disagree on marksmanship training methods. Additionally, LEOs still argue the merits of standard weapons versus personally preferred sidearms. Law enforcement accuracy rates remain dismal. There are no universal, mandatory standards for the safe storage of law enforcement pistols. Friendly fire deaths and accidental discharges still occur with regularity.

Newer firearm policies within the education sector have proven agile enough to sidestep the perennial law enforcement problems of safe gun storage and firearm competency. However, U.S. states and individual communities still struggle to wholly accept or reject a standard plan for firearms in the school setting. School districts that discover local support for guns still face tough budgetary decisions tied to training and equipment. Finally, even when states or communities agree that arming teachers is appropriate, most teachers resist carrying a firearm while working.

U.S. fire sector agencies wanting to adopt firearms models will need to contemplate the aggregate of challenges faced by both LEOs and armed teachers. Firearms are inherently dangerous, and it appears that legislators, pundits, and practitioners cannot eliminate all of the hazards associated with firearms possession and use. Fire sector stakeholders and decision-makers should build on the established best practices of law enforcement and teachers while understanding that there are still both policy and operational gaps that need to be addressed. Perhaps the fire sector can find creative and practical solutions to gun policies from within rather than looking outside their agencies.

101. Brian Hupp, "Just Say No to Guns for EMS," EMS World, February 18, 2019, <https://www.emsworld.com/commentary/1222146/just-say-no-guns-ems>.

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III. STAKEHOLDERS INVOLVED IN POLICYMAKING AND PROTECTION

A. INTRODUCTION

This chapter is divided into three distinct and equally germane segments. It explores the connection between fire service firearms policies and various levels of the U.S. government. This review of government guidance reveals that individual state authority is far more impactful than either federal or local forces. Furthermore, this section shows that there is no consensus on whether unified national gun policies for civilians or fire service personnel would prove to be a more effective than the current state-driven methodologies. Since governmental legislation and the oversight of gun policy development dictate the legality and legitimacy of firearms programs, it remains essential to periodically review how federal, state, and local governments influence the policymaking process.

The second section of this chapter examines the way in which relevant safety entities guide gun policies in the fire sector. Historically speaking, OSHA, NIOSH, the USFA, and the NFPA have all helped to shape fire sector workplace rules and regulations. Since safe practices underpin questions of liability, sustainability, and public support for gun-carry programs, it is essential to identify one or more agencies that will shoulder the responsibility of setting safety protocols for the fire sector. An analysis of the aforementioned organizations exposes their collective tendency to abstain from contributing to firearm safety conversations. Although the NFPA has been reluctant to lead gun-related policy discussions, a review of their history indicates that the organization possesses all of the attributes needed to direct future weapons safety policies.

The third and final section of this chapter acknowledges that firearms may not be the optimal solution for fire sector stakeholders who wish to address threats of violence. Although the basic premise of this thesis is that many fire agencies have already decided to shop for appropriate gun-carry policies, it would be foolish to ignore evidence that supports the withholding of guns altogether. An exhaustive study of research that fleshes out all of the reasons *not* to arm fire service members could easily warrant a book of its own. Therefore, for the purposes of this thesis, a brief mention of statistical data related to

fire service deaths and injuries caused by violent actors will have to suffice in recognizing the argument for abstention.

B. FEDERAL LEGISLATIVE STANCE

The federal government has little authority to set or influence national gun policies. Although Article I, Section 8 of the U.S. Constitution defines roughly 30 congressional powers including the ability to declare war, establish an army, maintain a navy, and set rules governing the armed forces, Congress generally lacks the authority to develop national gun-carry policies.¹⁰² The Tenth Amendment to the U.S. Constitution states: “The powers not delegated to the United States by the Constitution, nor prohibited by it to the states are reserved to the States respectively, or to the people.”¹⁰³ In effect, Congress’ enumerated powers prohibit its involvement in comprehensive gun legislation. Nonetheless, the federal government has leveraged the framers’ language to gain a toehold in firearms policies.

Congress *is* empowered by the commerce and taxation clauses of the Constitution, which allow for the oversight of interstate commerce (firearms crossing state lines) and the collection of taxes related to the manufacture, sale, and transfer of firearms.¹⁰⁴ However, beyond these exceptions, congressional power wanes. In short, states inherit the right to control gun laws simply because that responsibility was not assigned to the federal government by the Constitution’s framers.

Despite its limited influence, Congress does not entirely forfeit participation in gun legislation. The introduction of several federal acts dating back to 1934 stands as proof of federal involvement in national gun policy (see Table 1).¹⁰⁵ It is worth noting that the overwhelming majority of the relatively few federal gun acts focus on general safety considerations while withholding guidance on explicit details of gun-carry policies.

102. U.S. Const. art. I, S.8

103. U.S. Const. amend. X

104. Giffords Law Center, “Federal Powers to Regulate Guns.”

105. “Key Federal Acts Regulating Firearms,” Giffords Law Center, accessed October 22, 2020, <https://lawcenter.giffords.org/gun-laws/federal-law/other-laws/key-federal-acts-regulating-firearms/>.

Nonetheless, the Law Enforcement Officers Safety Act (LEOSA) of 2004 illustrates that unified, national gun legislation is possible when federal stakeholders interests align.¹⁰⁶

1. LEOSA Legislation

The LEOSA Act was introduced in the wake of 9/11 after national concerns over terrorist threats led Congress to authorize the carrying of concealed weapons by both active and retired law enforcement officers.¹⁰⁷ In sum, LEOSA allows current and former LEOs to carry firearms across state lines, regardless of individual state gun legislation. Although LEOSA was intended to improve homeland security throughout the nation, pushback from some states on LEOSA legislation has led to amendments in 2010 and 2013, and a proposed revamping of the law via the LEOSA Reform Act of 2019.¹⁰⁸

The LEOSA Reform Act is intended to clarify vague language in the original LEOSA Act regarding who fits the definition of a LEO. Furthermore, the document attempts to promote uniformity in gun magazine allowances across state lines. Disagreements over the interpretation of LEOSA have led states such as Hawaii and New Jersey to resist full compliance with the act.¹⁰⁹ The friction caused by LEOSA between some states and the federal government suggests that any proposal for a national firearm standard within fire service would be well contested.

106. LEOSA Reform Act of 2004, Public L. No. 108-277, (2004). <https://www.congress.gov/108/plaws/publ277/PLAW-108publ277.pdf>.

107. Michael Bulzomi, "Legal Digest: Off-Duty Officers and Firearms," Law Enforcement Bulletin, January 1, 2011, <https://leb.fbi.gov/articles/legal-digest/legal-digest-off-duty-officers-and-firearms>.

108. Police One Staff, "5 Things to Know about the LEOSA Reform Act," Police1, March 22, 2019, <https://www.police1.com/gun-legislation-law-enforcement/articles/5-things-to-know-about-the-leosa-reform-act-qiLVfTfPpssN24Od/>.

109. Gordon Graham, "Traveling with a Concealed Firearm?," Lexipol, June 30, 2020, <https://www.lexipol.com/resources/todays-tips/state-gun-laws-leosa-across-state-lines/>.

Table 1. Federal Acts Related to Firearms ¹¹⁰

Year	Federal Act	General Purpose
1934	National Firearms Act (NFA)	Taxation of certain classes of firearms *EXCLUDES most handguns*
1938	Federal Firearms Act (FFA)	Established that a federal license is needed to sell firearms Made it illegal to sell guns to felons
1968	Gun Control Act (GCA)	Set minimum age for purchase of firearms Required serial numbers for firearms Expanded exclusionary criteria of FFA
1986	Firearms Owners Protection Act (FOPA)	Legalized gun show sales within states Limited ATF inspections Prevented a federal database of firearms owners
1993	Brady Handgun Violence Prevention Act	Imposed a five-day waiting period for background checks
1994	Public Safety and Recreational Firearms Use Act	Banned semi-automatic assault weapons Prohibited large capacity ammunition feeding devices **ALLOWED TO EXPIRE IN 2004**
2004	Law Enforcement Officers Safety Act	Allows active and retired law enforcement officers to carry concealed firearms in any jurisdiction in the U.S. (with some exceptions)
2005	Protection of Lawful Commerce in Arms Act (PLCAA) & The Child Safety Lock Act (CSLA)	Required gun storage or safety device upon sale or transfer of firearms

110. Adapted from Giffords Law Center, “Key Federal Acts Regulating Firearms;” NRA-ILA “Law Enforcement Officers Safety Act (LEOSA),” accessed July 17, 2020. <https://www.nraila.org/gun-laws/leosa/>.

Year	Federal Act	General Purpose
2007	The National Instant Criminal Background Check System Improvement Amendments Act (NICS)	Monetary incentives offered to states willing to share personal information of those deemed mentally ill or institutionalized for use in the background check data bank.

Historical evidence suggests that the federal government will not get involved with fire sector gun policies. The Gun Control Act and the Brady Act continue to ensure that fire service members are vetted before they can be armed. However, this peripheral federal involvement is limited to deciding eligibility to carry a firearm. The federal government will not infringe upon state and local authorities decisions to arm firefighters, nor will it insist upon any particular standards for firearms platforms. Although LEOSA legislation hints at the possibility of a national gun standard for firefighters, stakeholders are still arguing its merits. If typically armed LEOs still cannot secure universal support for firearms carriage, what is the likelihood that fire service members ever could? For the time being, fire sector decision-makers will continue to build firearms programs without specific federal guidance.

2. State Legislative Positions

In 1788, writing Federalist No. 45, James Madison explained, “the powers delegated by the proposed Constitution to the federal government are few and defined. Those which are to remain in the State governments are numerous and indefinite.”¹¹¹ This document’s spirit remains intact in the form of individual state firearms legislation that governs gun permits, carry laws, sales, and self-defense laws.¹¹² The value of examining various state gun laws lies in the opportunity to gain an understanding of 1) how state laws

111. “Federalist Papers: Primary Documents in American History,” Library of Congress Research Guides, accessed July 21, 2020, <https://guides.loc.gov/federalist-papers/text-41-50>.

112. “Gun Laws By State: The Complete Guide,” Guns To Carry, accessed August 30, 2020, <https://www.gunstocarry.com/gun-laws-state/>.

may influence gun ownership and use given that fire sector gun policies are created to address the threat of armed combatants; and 2) how individual states might implement fire sector gun models based on their legislative stances on guns. Individual state laws impact handgun accessibility and the number of firearms circulating in a given state. It is likely that in some states, either the routine nature of interactions with armed individuals or a more pronounced threat of gun violence tied to widespread gun use could lead to greater support for arming fire sector personnel.

The disparity in U.S. state gun policies is witnessed through a comparison of the most permissive and restrictive jurisdictions. For example, both Alaska and Arizona allow the private sale of guns without background checks, do not require permits for the purchase of firearms, and permit open carrying of handguns and long guns.¹¹³ Conversely, states such as New York, New Jersey, and California require background checks to purchase firearms and permits for private sales while prohibiting the open carry option.¹¹⁴ How might these inconsistencies inform gun policies for the fire service?

RAND confirmed that Americans have complex attitudes toward guns.¹¹⁵ Their research revealed that citizens disagree on perceived gun policy *outcomes* more than the need for gun policies.¹¹⁶ Some Americans view the presence of guns as a symbol of violence, while others perceive guns as a tool used to provide security and safety. For example, scores of new gun laws have been enacted by state legislatures since the Parkland, Florida, shooting of 2018. The Associated Press and Steve Contorno reported that some states like Iowa, Louisiana, and Ohio have expanded some gun rights while Vermont,

113. Guns To Carry, “Gun Laws by State.”

114. Guns To Carry, “Gun Laws by State.”

115. “Gun Policy in America: An Overview,” RAND, last modified April 22, 2020, <https://www.rand.org/research/gun-policy/key-findings/gun-policy-in-america.html>.

116. RAND, “Gun Policy in America.”

Washington, and Connecticut have diluted others.¹¹⁷ This seemingly schizophrenic flurry of legislation is a classic example of the difficulty in setting national gun frameworks.

The wide array of gun legislation from state to state suggests that fire agencies may want to continue constructing proprietary gun-carry programs rather than waiting to adopt a universal model that may never come to pass. The outlook on domestic gun policy partnerships remains bleak. Nevertheless, all U.S. states are mandated to comply with federal gun acts. This reality establishes that cooperation and coordination across the nation regarding gun policies is possible. Perhaps, then, it is time for states to consider the feasibility of synchronizing legislation and enforcement of all matters related to firearms.

3. Federal Firearms Legislation

Giffords Law Center explains that the preemption of gun laws “occurs when a higher level of government removes regulatory power from a lower level of government.”¹¹⁸ The national discourse on preemption emerged in 1981 after the city of Morton Grove, Illinois, instituted a handgun ban.¹¹⁹ The National Rifle Association (NRA) disputed the ban and rallied state-based gun rights advocates in Illinois to fight the measure. The town of Morton Grove was able to resist preemption for 27 years until the U.S. Supreme Court ruling in *District of Columbia versus Heller*.¹²⁰ In 2008, the Supreme Court ultimately ruled 5–4 in favor of protecting the Second Amendment rights of citizens to keep and bear firearms. Shortly thereafter, Morton Grove conceded defeat and repealed their handgun ban.¹²¹

117. Associated Press and Steve Contorno, “Here Is Every New Gun Law in the U.S. since the Parkland Shooting,” *Tampa Bay Times*, February 13, 2019, <https://www.tampabay.com/florida-politics/buzz/2019/02/13/here-is-every-new-gun-law-in-the-us-since-the-parkland-shooting/>.

118. “Preemption of Local Laws,” Giffords Law Center, accessed October 12, 2020, <https://lawcenter.giffords.org/gun-laws/policy-areas/other-laws-policies/preemption-of-local-laws/>.

119. Jennifer Mascia, “In Much of the Country, Cities Can’t Enact Their Own Gun Laws,” *The Trace*, December 8, 2018, <https://www.thetrace.org/2018/12/preemption-nra-local-gun-laws/>.

120. *District of Columbia v. Heller*, 554 U.S. 570 (2008), <https://supreme.justia.com/cases/federal/us/554/570/>.

121. Robert Channick, “Morton Grove’s Landmark Gun Prohibition Is Repealed,” *Chicago Tribune*, July 29, 2008, <https://www.chicagotribune.com/news/ct-xpm-2008-07-29-0807280686-story.html>.

The SCOTUS ruling in *District of Columbia v. Heller*, has been bolstered by additional, local legislative ordinances throughout the country. Jennifer Mascia reports that currently, 44 states have preemption laws "prohibiting local governments from enacting gun regulations that are stricter than those passed by state legislators."¹²² However, not all local legislators are content to cede gun policy authority to the states. Mayor Bill Peduto is one city leader who successfully pressed his city council to pass stricter gun laws following a 2018 mass shooting in Pittsburgh.¹²³ Nonetheless, his action and subsequent call for support from mayors throughout the country may not find traction as the city council decision has already prompted lawsuits by the NRA.¹²⁴

Recently, a similar yet even more aggressive action to repeal preemption laws took root in Illinois. However, the NRA has called for resistance to the measure insisting that preemption laws are an essential protection against the weakening of Second Amendment rights.¹²⁵ The NRA further argues that allowing individual cities to enact gun legislation will lead to a confusing assortment of gun laws making compliance more difficult.

The implications for the fire sector here are twofold. First, firearms ownership will continue to pose a threat at the local level. Second, firearms policies for the fire sector must remain a consideration as long as the danger of engaging with armed perpetrators exists. For nearly four decades, state preemption laws have proven to be too powerful for smaller governments to overcome. If cities are unable to enact legislation to ban firearms use, it might be beneficial for them to put more resources into well-designed gun policies and programs that can adequately address gun violence threats.

122. Mascia, "In Much of the Country, Cities Can't Enact Their Own Gun Laws."

123. Mascia, "In Much of the Country, Cities Can't Enact Their Own Gun Laws."

124. J. Dale Shoemaker, "Pittsburgh City Council Passes Landmark Gun Legislation. NRA Prematurely Said It Filed Suit," PublicSource, April 2, 2019, <https://www.publicsource.org/pittsburgh-city-council-passes-landmark-gun-legislation-nra-promptly-files-suit/>.

125. "Illinois: Senate Attempts to Repeal Preemption Law," NRA-ILA, accessed July 24, 2020, <https://www.nraila.org/articles/20180314/illinois-senate-attempts-to-repeal-preemption-law>.

C. SAFETY AGENCY STANCES

According to the Bureau of Labor Statistics, between 2011 and 2018, an annual average of 350 victims died as a result of firearms violence in workplaces across the United States.¹²⁶ Thus, gun control advocates assert that loaded firearms pose an immediate threat to human health and safety within workplace settings.¹²⁷ Additionally, the nonprofit organization Brady United reports that more than 110,000 U.S. citizens are shot annually.¹²⁸ Given that fire service members typically respond to these gunshot emergencies in order to provide prehospital medical care, it appears that fire sector personnel are exposed to workplace gun violence at a much greater rate than the general population. However, in spite of alarming firearm-related violence data, guidance on gun safety for U.S. fire service programs is generally lacking. An examination of some leading fire safety organizations might indicate which agency or agencies should take the lead in establishing gun safety standards for the fire service. Since time and space limitations prohibit the examination of all safety entities, the focus will remain on a handful of the most prominent examples. Ironically, the NRA provides gun safety guidelines free of charge to the public.¹²⁹ Will safety agencies that share relationships with the fire service offer similar strategies for the fire sector? If not, then why not?

126. “National Census of Fatal Occupational Injuries in 2018,” U.S. Department of Labor, accessed September 2, 2020, https://www.bls.gov/news.release/archives/cfoi_12172019.pdf#:~:text=NATIONAL%20CENSUS%20OF%20FATAL%20OCCUPATIONAL%20INJURIES%20IN%202018.,reported%20today.%20%28See%20chart%201%20and%20table%201.%29.

127. “Statement: Gabrielle Giffords Responds to 3 Workplace Shootings in 24 Hours,” Giffords Courage to Fight Gun Violence, September 20, 2018. <https://giffords.org/press-release/2018/09/workplace-shootings/>. Gabrielle Giffords is a former U.S. Representative from the state of Arizona. Giffords became a fervent gun control advocate after being shot in the head during a constituent meeting in 2011. Here, she issues an anti-firearms statement following three shootings in workplaces across the U.S. within just 24 hours. “APA’s Advocacy on Gun Violence Prevention,” American Psychological Association, accessed August 15, 2020, <https://www.apa.org/advocacy/gun-violence>. The American Psychological Association (APA) has launched a campaign to reduce gun violence across the nation, including those shootings that occur in the workplace.

128. “Key Statistics,” Brady United, accessed July 25, 2020, <https://www.bradyunited.org/key-statistics>.

129. “NRA Gun Safety Rules,” NRA Explore, accessed July 17, 2020, <https://gunsafetyrules.nra.org/>.

1. Occupational Safety and Health Administration

The Occupational Safety and Health (OSH) Act of 1970 led to the creation of the Occupational Safety and Health Administration (OSHA).¹³⁰ At that time, the United States Congress determined that the cost of work-related injuries was simply too high for U.S. taxpayers to bear. Thus, OSHA was established in an attempt to promote safe workspaces and mitigate workplace injuries. Reflecting prior justification for involvement in national gun policy, the federal government again cited both interstate commerce oversight and improved tax revenues as reasons to intervene in workplaces across the country.¹³¹ In sum, the OSH Act provided a framework that insisted on federal involvement in policy that was broad yet not all-encompassing.

OSHA concerns run the gamut from slip and fall protection to machinery and machine guarding to eye and face protection in work settings.¹³² To its credit, the organization boasts that worker deaths dropped from an average of 38 a day in 1970 to an average of 14 a day in 2018.¹³³ Additionally, the organization stresses that there are significantly lower rates of workplace injury since its inception. Although some data appears favorable, not all OSHA statistics reflect well upon the organization. One glaring example is the number of recorded instances of gun violence.

According to OSHA's statistics, there were 458 workplace homicides in the U.S. in 2017.¹³⁴ Doucette et al. support that number and further explain that 351 of those homicides were committed with firearms.¹³⁵ Furthermore, Kamika Shaw reported that

130. "OSH Act of 1970," Occupational Safety and Health Administration," December 29, 1970, <https://www.osha.gov/laws-regs/oshact/completeoshact>.

131. Occupational Safety and Health Administration, "OSH Act of 1970," sec. 2(a).

132. "Commonly Used Statistics, Occupational Safety and Health Administration," U.S. Department of Labor, accessed September 2, 2020, <https://www.osha.gov/data/commonstats>.

133. U.S. Department of Labor, "Commonly Used Statistics."

134. "Workplace Violence," U.S. Department of Labor, accessed September 2, 2020, <https://www.osha.gov/workplace-violence>.

135. Mitchell Doucette, Cassandra Crifasi, and Shannon Frattaroli, "Right-to-Carry Laws and Firearm Workplace Homicides: A Longitudinal Analysis," American Public Health Association, November 6, 2019, <https://ajph.aphapublications.org/doi/10.2105/AJPH.2019.305307>.

when pressed to take a stand against firearms in the workplace, OSHA refused.¹³⁶ Paradoxically, both OSHA and its parent entity, the Department of Labor, insist on policies that prohibit general workplace violence while ignoring the more specific gun violence problem.

It is unclear why OSHA will not weigh in on gun policies in the workplace. Indeed, the lack of OSHA firearms oversight has led to *less* restrictive workplace gun laws. In 2004, the U.S. Court of Appeals for the Tenth Circuit ruled in favor of “parking lot laws,” which allow employees to keep firearms in their vehicles while at work.¹³⁷ The Appellate Court specifically cited a lack of OSHA regulations banning the practice as the justification for the ruling.¹³⁸ Based on that judgment, 26 states now offer varying levels of protection for employees who wish to store firearms in their vehicles on company property.¹³⁹ More than 15 years have passed since parking lot laws were introduced. OSHA continues to abstain from involvement in gun-related matters.

Nearly 50 years have passed since President Richard Nixon endorsed the creation of OSHA. The organization has shown that it can effectively reduce workplace injuries and deaths through legislation, education, and workplace visits. Nonetheless, fire agencies will not be guided by OSHA firearm safety policies for the foreseeable future. Instead, the fire sector will have to create and maintain in-house firearms safety policies until OSHA or another recognized safety agency decides that intervention is appropriate.¹⁴⁰

136. Kamika S. Shaw, “Regulating Guns in the Workplace,” *OnLabor* (blog), March 29, 2017, <https://www.onlabor.org/regulating-guns-in-the-workplace/>.

137. Eddie Sorrells, “Weapons in the Workplace,” *Security Management*, March 1, 2018, <http://www.asisonline.org/security-management-magazine/articles/2018/03/weapons-in-the-workplace/>.

138. Sorrells, “Weapons in the Workplace.”

139. David Sparkman, “Can You Keep Guns Out of Your Workplace?,” *EHS Today*, January 7, 2019, <https://www.ehstoday.com/environment/article/21919948/can-you-keep-guns-out-of-your-workplace>.

140. A direct question was submitted to OSHA’s query application via OSHA.com in March 2019 regarding the agency’s position on firearms. The reply, which was not attributable to any particular OSHA employee, simply stated that gun safety issues are beyond the organizations purview. No further explanation was offered.

2. National Institute for Occupational Safety and Health

As noted previously, the National Institute for Occupational Safety and Health (NIOSH), like OSHA, was created by the OSH Act of 1970. Whereas OSHA is tasked with actual enforcement of policies and can levy fines, NIOSH's role is to make recommendations based on research related to the prevention of workplace injuries. Unlike OSHA, which works under the U.S. Department of Labor, NIOSH's budget falls under the Centers for Disease Control and Prevention (CDC).¹⁴¹ NIOSH's place beneath the CDC umbrella may explain why the agency has not initiated firearms research that could benefit the fire sector.

In 1993, the CDC published a report that demonstrated homes with guns were more dangerous than homes without weapons.¹⁴² In response to the research, the NRA lobbied Congress to pass the Dickey Amendment sponsored by Arkansas Congressman Jay Dickey. The amendment was attached to the 1996 U.S. Federal Omnibus Spending Bill.¹⁴³ The legislation states that CDC funds may not be used to fund research that would "advocate or promote gun control."¹⁴⁴ For more than two decades, the CDC's Injury Prevention Center has steered clear of gun violence-related research. Fear of violating the Dickey Amendment's spirit, coupled with concerns about defunding, has had a chilling effect on would-be researchers. Laura Wexler confirms the shortage of CDC gun violence data, research, and expertise.¹⁴⁵ Gun policy researcher Cassandra Crifasi concurs and

141. "Fire Fighter Fatality Investigation and Prevention Program," Centers for Disease Control and Prevention (CDC), last modified June 6, 2014, <https://www.cdc.gov/niosh/fire/default.html>.

142. Arthur Kellerman et al., "Gun Ownership as a Risk Factor for Homicide in the Home." *The New England Journal of Medicine*, 329 (October 1993):1084–1091. <https://www.nejm.org/doi/full/10.1056/NEJM199310073291506>.

143. Allen Rostron, "The Dickey Amendment on Federal Funding for Research on Gun Violence: A Legal Dissection," *American Journal of Public Health* 108, no. 7 (July 2018): 865–67, <https://doi.org/10.2105/AJPH.2018.304450>.

144. Laura Wexler, "Gun Shy: How the Dickey Amendment Affects Gun Violence in America" *Hopkins Bloomberg Public Health Magazine*, Fall 2017. <https://magazine.jhsph.edu/2017/fall/features/cassandra-crifasi-hopkins-moderate-gun-owner-gun-policy-researcher/how-the-dickey-amendment-affects-gun-violence-research.html>.

145. Wexler, "Gun Shy."

maintains that there are possibly as few as 30 gun-policy experts in the country due to a universal lack of funding for gun-related research programs.¹⁴⁶

Presently, NIOSH is in no position to inform gun safety policies for the fire sector. As long as the CDC limits funding toward gun violence research, NIOSH will be unable to explore potential solutions to firearm safety concerns. At best, in the absence of sound data, NIOSH would be forced to make educated guesses to determine safety protocols. Furthermore, even if the Dickey Amendment were to be repealed, NIOSH is an agency that merely makes recommendations. Without the teeth of enforcement power behind policy frameworks, NIOSH would be unable to guarantee safety compliance from fire agencies.

3. United States Fire Administration

The Federal Fire Prevention and Control Act of 1974 (FPCA) established the National Fire Prevention and Control Administration, which is known today as the United States Fire Administration (USFA).¹⁴⁷ The agency operates as a subdivision of the U.S. Department of Homeland Security’s Federal Emergency Management Agency (FEMA).¹⁴⁸ The organization’s mission statement explains that their goal “is to support and strengthen fire and emergency medical services (EMS) and stakeholders to prepare for, prevent, mitigate, and respond to *all hazards*.”¹⁴⁹

Though the USFA’s mission statement suggests that it would be well suited to weighing in on U.S. firearms policies, a closer look at the FPCA reveals some conflicting ideals. Section 7. 1 (a-f) of the FPCA not only directs that the USFA involve itself in tactical and command training of U.S. fire service personnel it also leaves room for expansion of its responsibilities. However, Section 2. 11 of the same document explains that the USFA was created to “support and reinforce the activities of state and local

146. Wexler, “Gun Shy.”

147. Federal Fire Prevention and Control Act of 1974, P Law No. 93–498-O §, (a) (1974), <https://www.govinfo.gov/content/pkg/STATUTE-88/pdf/STATUTE-88-Pg1535.pdf>.

148. “About the U.S. Fire Administration,” U.S. Fire Administration, accessed September 30, 2020. <https://www.usfa.fema.gov/about/index.html>.

149. U.S. Fire Administration, “About the U.S. Fire Administration.”

government” rather than dictate policies. Due to the ambiguous language of the FPCA, the USFA appears to have some latitude in how it may choose to influence gun-carry policies.

Semantics aside, actions often speak louder than words, and it is essential to contextualize the USFA’s voice in this conversation against the agency’s body of work. Although the USFA, like OSHA, promotes fire sector safety in general, the agency has no formal stance on firearms. Furthermore, unsurprisingly, most USFA resources are geared toward training, education, and data collection in fire-related matters.¹⁵⁰ Gun violence and fire sector gun programs do not appear to be a priority for the agency. The magazine *Government Technology* supported this notion stressing that the USFA’s top priorities are better data collection, expanding fire training and education, and funding fire-related research.¹⁵¹

The USFA is not the appropriate organization to establish fire service gun policies. Although the loosely worded language in the FPCA might allow the agency to offer direction in the matter, the organization’s track record demonstrates a lack of interest and inertia regarding firearms standards. Additionally, the USFA is strongly committed to mitigating fire-related losses of life and property to the exclusion of other causes. Furthermore, given the agency works with a budget of less than \$50 million, it is unlikely that it would be able to dedicate ample resources toward the endeavor.¹⁵²

4. The NFPA and Active Shooter Hostile Environment Response

The National Fire Protection Association (NFPA) is considered the leading national information resource for fire-related hazards.¹⁵³ Founded in 1896, the NFPA has

150. U.S. Fire Administration, “About the U.S. Fire Administration.”

151. Government Technology, “Hearing to Reauthorize U.S. Fire Administration (USFA),” October 3, 2007, <https://www.govtech.com/e-government/Hearing-to-Reauthorize-US-Fire-Administration.html>.

152. Laura French, “President’s Budget Recommends Less Funding for AFG/SAFER, More for USFA,” February 11, 2020, <https://www.firerescue1.com/legislation-funding/articles/presidents-budget-recommends-less-funding-for-afgsafer-more-for-usfa-kleWWSEFbYtINdXZ/>.

153. “About,” National Fire Protection Association, accessed June 13, 2020, <https://www.nfpa.org/About-NFPA>.

established more than 300 codes and standards for U.S. fire departments.¹⁵⁴ The bulk of NFPA standards are related to fire and electrical hazards. However, the NFPA's role as a safety watchdog occasionally leads to its involvement in policies that reach beyond routine fire operations.

In 2018, *Industrial Safety and Hygiene News* reported that the NFPA's Standards Council opted to abbreviate its typical timeline for standard development to address the national threat of active shooters. Mass shootings such as the Pulse nightclub in Orlando, Florida, Mandalay Bay in Las Vegas, Nevada, and the church shooting in Sutherland, Texas, prompted the call to action. The result of the effort to unify emergency personnel response and mitigate risk is the NFPA 3000 standard for Active Shooter Hostile Environment Response (ASHER).¹⁵⁵ The urgent need for active shooter policy is supported by Hart, who reported that between 2000–2018 there were 277 active shooter events in the U.S., resulting in 2,430 casualties.¹⁵⁶

The facts above raise an important question. If the NFPA was able to coordinate and expedite the creation of the ASHER standard so quickly, then why have they not shown any inclination to direct firearms use in the fire sector? In creating the ASHER standard, the NFPA has indeed involved itself in establishing gun-related protocols. Why then has the NFPA stopped short of suggesting best practices for firearms in the fire sector? A closer look at fire sector violence data may provide the answer.

154. National Fire Protection Association, "NFPA Overview."

155. "NFPA 3000, Standard for an Active Shooter/Hostile Event Response (ASHER) Program," National Fire Protection Agency, accessed June 13, 2020, https://catalog.nfpa.org/NFPA-3000-PS-Standard-for-an-Active-ShooterHostile-Event-Response-ASHER-Program-P18697.aspx?order_src=D840&gclid=CjwKCAjw0_T4BRBIEiwAwoEiAV2WJEYWQks2DtFNiAybAKxAUQACJjS2z6WxZO0YOoQt8gH9iOww0RoC7ikQAvD_BwE. ASHER is a response framework for emergency personnel created to improve awareness and establish; unified command, integrated response, planned recovery, and community involvement.

156. Greg Hart, "What Is NFPA 3000 and Why Is It Important to Me?" RCM&D, January 30, 2020, <https://www.rcmd.com/resources/blog/what-nfpa-3000-and-why-it-important-me>.

D. FIRE SECTOR VIOLENCE MAY INDICATE THAT GUNS ARE NOT NEEDED

1. Injury Data

The NFPA has only been analyzing statistics on firefighter injuries and deaths since 1981.¹⁵⁷ Similarly, the United States Fire Administration (USFA), the principal federal agency for national fire data collection, public fire education, fire research, and fire service training, failed to maintain valid data on fire service injuries or deaths by violent actors prior to 1990.¹⁵⁸ Therefore, we can say that the study of firefighter injuries and deaths is a relatively new endeavor. Consequently, we will glean what we can from the most recent information available.

Upon viewing the figures currently available from the NFPA for years 2010–2019, there is virtually no indication that acts of violence play any significant role in the volume of firefighter injuries.¹⁵⁹ USFA data for the same period gathered from the National Fire Incident Reporting System (NFIRS) supports the NFPA’s findings.¹⁶⁰ According to the NFPA’s accounting, the most consistently reported firefighter injuries are caused by thermal burns, smoke inhalation, falls, and strains or sprains.¹⁶¹ Furthermore, NFPA’s statistical charts for 2010–2019 do not indicate that violence-related fire sector injuries are a common concern. Also, for the same period, the NFPA does not mention addressing violence as a consideration in reducing firefighter injuries as it does for other noted causes of trauma in its evaluative reports for the same period. This is not to suggest that many working in the fire service do not operate in hostile or potentially hostile environments. Instead, it implies that exposure to said environments seldom leads to injury.

157. Richard Campbell and Joseph Molis, “Firefighter Injuries Report in 2018,” *NFPA Journal Magazine*, November 1, 2019. <http://www.nfpa.org/News-and-Research/Publications-and-media/NFPA-Journal/2019/November-December-2019/Features/FF-Injuries>.

158. U.S. Fire Administration, “About the U.S. Fire Administration.”

159. Campbell and Molis, “Firefighter Injuries Report in 2018.”

160. “National Fire Incident Reporting System,” U.S. Fire Administration, July 22, 2020, <https://www.usfa.fema.gov/data/nfirs/index.html>.

161. “Firefighter Injuries in the United States,” National Fire Prevention Association, accessed November 1, 2019, <https://www.nfpa.org/News-and-Research/Data-research-and-tools/Emergency-Responders/Firefighter-injuries-in-the-United-States>. Most recent data available from 2007–2018.

2. Firefighter Deaths Are Rarely Linked to Violence

In addition to recording firefighter injury data, the NFPA also tracks firefighter death-related statistics. A careful examination of the relevant data for the last decade reveals that firefighter deaths attributable to violence accounted for just over 1% of the total firefighter line of duty casualties.¹⁶² Additionally, the most recent NFPA data indicates that nationally, firefighters responded to an average of over 34 million calls for assistance between 2010 and 2019.¹⁶³ The relatively low number of firefighters killed by gun violence in proportion to the number of emergency responses presents a compelling argument against a need for firearms in the fire service. Nonetheless, on June 9, 2020, Texas firefighter Klayton Manning was killed while on duty by a lone gunman.¹⁶⁴ Although Manning's death is tragic, NFPA statistics show that, on average, only one firefighter per year dies in the United States due to an act of violence.¹⁶⁵

The data collected suggests that both the USFA and NFPA might resist the idea of recommending gun safety protocols for the fire industry. Likely, the two safety agencies do not find current statistical evidence compelling enough to warrant arming firefighters. Indeed, arming firefighters may be a disproportionate reaction to abject violence rather than what amounts to be an aberration from a statistical perspective. However, the alarming trend of increased mass shooting incidents from 2013–2018 caused the NFPA to take extraordinary measures to create the NFPA 3000 standard.¹⁶⁶

¹⁶². Rita Fahy, Jay Petrillo and Joseph Molis, *Firefighter Fatalities in the United States* (Quincy, MA: National Fire Protection Association, 2020), <https://www.nfpa.org/News-and-Research/Data-research-and-tools/Emergency-Responders/Firefighter-fatalities-in-the-United-States>.

¹⁶³. “NFPA Statistics—Fire Department Calls,” National Fire Protection Association, accessed November 1, 2019, <https://www.nfpa.org/News-and-Research/Data-research-and-tools/Emergency-Responders/Fire-department-calls>. Here the NFPA provides annual national data on the total number of firefighter responses.

¹⁶⁴. “USFA: Texas On-Duty Death,” Firefighter Nation, June 16, 2020, <https://www.firefighternation.com/2020/06/16/usfa-texas-on-duty-death-8/>.

¹⁶⁵. “16 Firefighter Life Safety Initiatives,” Everyone Goes Home, accessed April 23, 2020, <https://www.everyonegoeshome.com/16-initiatives/12-violent-incident-response/>.

¹⁶⁶. Jugal K. Patel, “After Sandy Hook, More Than 400 People Have Been Shot in Over 200 School Shootings,” *New York Times*, February 15, 2018, under sec. U.S., <https://www.nytimes.com/interactive/2018/02/15/us/school-shootings-sandy-hook-parkland.html>.

After spearheading ASHER, the NFPA's decision to withhold guidance for fire sector gun policies seems counterintuitive. The NFPA has proven that it can gather support for national policies and install them in a timely fashion; therefore, the NFPA may be the only safety agency ideally positioned to create national fire sector gun policies. How or when the NFPA might choose to get involved in setting gun program standards remains up to the agency itself.

E. CONCLUSION

The U.S. Constitution, commonplace state conceal carry legislation, and parking lot laws afford most citizens the right to carry firearms. Despite some individual state restrictions on gun use, federal laws presently favor firearms possession for those citizens who choose to exercise their Second Amendment rights. As long as a substantial portion of the U.S. population can procure firearms, the fire sector must consider how they will address the ongoing threat of gun violence.

Since the U.S. Constitution dampens federal authority on firearms and the NRA has proven to be highly effective in defeating local attempts at establishing gun legislation, individual state governments will continue to dictate the terms for gun use in the fire sector. Nonetheless, the possibility remains that federal laws will be adjusted to demand universal participation in a new fire sector-related firearms act. Indeed, the creation of LEOSA has already expanded gun-carry rights for both active and retired U.S. law agents. However, federal coordination is unlikely due to myriad systemic hurdles previously discussed. It then follows that individual states must decide if they are comfortable with ownership of fire service firearms protocols. Unless an overwhelming majority of states come together and demand federal intervention to create one national firearms policy, the future of firearm legislation will continue to resemble its past.

OSHA has proven to be successful in reducing workplace violence and deaths. Nonetheless, the organization has also demonstrated ambivalence on workplace violence matters. OSHA is a vocal opponent of violence but withholds a formal opinion on firearms. Simply put, the agency has refused to make meaningful contributions to the conversation

of guns in the workplace. For the moment, OSHA will not provide answers to tough gun policy questions.

NIOSH, OSHA's sister agency, is also incapable of directing firearms programs. The agency remains hamstrung by the Dickey Amendment. NIOSH will be of no use in creating firearms frameworks until it can resume gun violence research with impunity. Additionally, NIOSH lacks the critical enforcement authority that must accompany effective policy-making. If NIOSH is not allowed to administer penalties for non-compliance, then policy creation and oversight may be more appropriately tasked to an agency that can wield that power.

The USFA, by its own admission, is primarily a data gathering and analysis entity.¹⁶⁷ The USFA is the fire sector's quintessential intelligence agency, and it should continue to play to that strength. Additionally, the organization can be useful in helping to educate the public and by suggesting improvements in emerging firearms programs. These are the agency's core competencies that can be leveraged to support armed fire agencies. In summary, the USFA is best suited to evaluating the efficacy of fire service gun programs rather than establishing them.

Finally, the NFPA is a fire sector agency that does show some promise. The NFPA has helped to guide fire service policies for more than 120 years. Fire sector agencies are well-accustomed to having standards and codes established through the organization. The ratification of gun-carry policies via the NFPA would all but guarantee acceptance and compliance from fire departments throughout the nation. Through the establishment of the NFPA 3000 ASHER standard, the NFPA has proven that it can rapidly harness commitment and cooperation from various agencies and set a universal weapons-related model. Therefore, the NFPA would be the ideal organization to decide upon best practices for firearms use by fire sector personnel.

Taking these various considerations together, it may be that the wisest and most economical course of action for fire sector decision-makers is to step away from gun

167. "U.S. Fire Statistics," U.S. Fire Administration, accessed April 16, 2020, <https://www.usfa.fema.gov/data/statistics/index.html>.

procurement models altogether. In fact, opting out of gun-carry policies is still the rule rather than the exception among U.S. fire organizations. Undeniably, the analysis of data gathered by the NFPA, and USFA confirms that firefighter injuries and deaths are rarely attributed to acts of violence. However, for the time being, it appears that the prevalence of national gun violence will continue to motivate fire agencies to weigh the merits of firearms programs. Thus, it is both more productive and relevant to discuss the emerging phenomenon of gun-carry adoption within the U.S. fire sector rather than engage in reaffirming the traditional stance of eschewing gun carriage.

IV. EVALUATING THREE OPTIONS FOR U.S. FIRE SECTOR GUN-CARRY POLICIES

A. INTRODUCTION

This chapter reviews the gun carry policies used by fire departments in Sunnyvale, California, and Loveland, Colorado, and also examines the open-carry policy model used by a number of fire organizations located throughout the United States. These models were chosen because their methods of arming personnel are so diverse. First, Sunnyvale, California, arms its fire personnel by opting to consolidate police, fire, and medical services into one Department of Public Safety (DPS). Second, Loveland, Colorado's Tactical Fire Teams (TFTs) train alongside their local police SWAT teams and are qualified to use all SWAT team weapons. Last, despite the lack of formal gun programs within many fire agencies, at least eight states currently allow fire department employees to carry concealed firearms while on duty. Comparing these model's distinct traits can help fire sector decision-makers identify characteristics unique to each model that might best suit their particular needs.

Each of these three policies will be examined in terms of five factors. First, they will each be assessed in terms of the costs associated with creating and maintaining these programs. Next, personnel response times will be considered as this impacts the availability of firearms should the need arise. Third, each model will be viewed through the filter of urban department versus rural agency needs and resources. Then, this review will discuss the impact of local gun laws vis -a-vis public and political attitudes toward each methodology. Finally, the sum of agencies practicing each model will be noted. The number of agencies using these three frameworks will help to illustrate the viability of each of the programs for fire sector decision-makers.

B. SUNNYVALE, CALIFORNIA, DEPARTMENT OF PUBLIC SAFETY

1. Background

According to a 2020 NFPA report, there are more than 29,000 fire departments in the United States.¹⁶⁸ At last official count, just 128 of these agencies employed a combined fire/medical and police service model like Sunnyvale, California (most commonly referred to as a Department of Public Safety).¹⁶⁹ Sunnyvale Captain Jim Choi insists that Sunnyvale’s DPS enjoyed a smooth integration process in 1950 because the town of just 10,000 citizens had a small police force and only a handful of volunteer firefighters.¹⁷⁰ At the time of its inception, the Sunnyvale DPS model was thought to be both innovative and controversial. Today, pundits still agree that the agency is inventive in its approach to providing emergency service. However, across the nation, stakeholders continue to debate whether Sunnyvale’s DPS model is feasible for most municipalities.

Despite the small number of cities using DPS systems, consideration of DPS programs like Sunnyvale’s has persisted.¹⁷¹ Some citizens and administrators believe that adding fire and medical care responsibilities to police forces will help soften police department images. Perennial calls for police reform have strengthened this argument. Moreover, wrongful use of force cases (i.e., George Floyd, Breana Taylor, etc.) have deepened the national division of opinions on police department legitimacy. The result has been a renewed interest in hybrid models like Sunnyvale’s DPS.¹⁷²

168. National Fire Prevention Association, “NFPA Report - U.S. Fire Department Profile,” February 2020, <https://www.nfpa.org/News-and-Research/Data-research-and-tools/Emergency-Responders/US-fire-department-profile>.

169. “Police-Fire Mergers Fuel MSU Research Program,” *MSU Today*, March 21, 2013, <https://msutoday.msu.edu/news/2013/police-fire-mergers-fuel-msu-research-program/>.

170. Erika Towne, “Sunnyvale’s Department of Public Safety Is One of the Largest Fully-Integrated Departments in the U.S.,” *The Silicon Valley Voice* (blog), April 11, 2019, <https://www.svvoice.com/sunnyvales-department-of-public-safety-is-one-of-the-largest-combined-departments-in-the-u-s/>.

171. Steven Chermak, Charles Scheer, and Jeremy M. Wilson, “Police Consolidation in the News,” *Police Quarterly* 17, no. 2 (2014): 150.

172. Kai Rhyssdal and Bennett Purser, “How One City Provides Public Safety without a Police Department,” *Marketplace*, June 10, 2020, <https://www.marketplace.org/2020/06/10/how-one-city-provides-public-safety-without-a-police-department/>.

From a financial perspective, many stakeholders believe that using a unified DPS system will result in long-term savings for taxpayers.¹⁷³ Proponents of DPS organizations are critical of what they consider to be inefficient, traditional emergency service models. They stress that sustaining independent fire, medical, and police agencies leads to duplication of efforts, poor communication between operating forces, less flexibility in personnel use, and unnecessary administrative expenditures.¹⁷⁴ Conversely, critics of Sunnyvale’s DPS template believe that the challenges tied to organizational consolidation are significant. For example, although Mata supports the general concept of DPS systems, he acknowledges significant hurdles to adopting the model, such as the need for “visionary leadership, a willingness to create change and culture, and supportive city government,” to name just a few.¹⁷⁵

2. Costs

The cost-effectiveness of Sunnyvale’s DPS system remains in question. Rich Rifkin, an advocate for DPS models, reported that Sunnyvale’s per capita public safety costs were just \$519 compared to \$683 and \$950 for neighboring towns Mountain View and Palo Alto, respectively.¹⁷⁶ However, the lengthy training period for Public Safety Officers (PSOs) and expenses associated with said training have dissuaded some organizations from moving toward DPS frameworks.¹⁷⁷ As per Sunnyvale’s recruitment materials, new DPS hires can expect 20 weeks of police training followed by a 16-week

173. Chermak, Scheer, and Wilson, “Police Consolidation in the News,” 150.

174. Brandon Morley and Jeffrey Hadley, “Perspective: Public Safety Consolidation—Does It Make Sense?,” FBI: Law Enforcement Bulletin, April 9, 2013, <https://leb.fbi.gov/articles/perspective/perspective-public-safety-consolidation-does-it-make-sense>.

175. Mata, “The Contribution of Police and Fire Consolidation to the Homeland Security Mission,” 65.

176. Rich Rifkin, “Is It Always Sunnier in Sunnyvale?,” *Davis Enterprise* (blog), January 15, 2013, <https://www.davisenterprise.com/forum/opinion-columns/is-it-always-sunnier-in-sunnyvale/>.

177. Susan M. Hilal, “A Package Deal: Police, Fire, and EMS All in One,” *Police Chief Magazine*, September 2014, <https://www.policechiefmagazine.org/a-package-deal-police-fire-and-ems/>.

fire academy, all capped by seven weeks of emergency medical training.¹⁷⁸ Lee Romney affirms that Sunnyvale’s training costs are both “steep and constant.”¹⁷⁹

Agencies that opt to use DPS templates must remain aware of the risks associated with investing in such lengthy and expensive training. Unpredictable circumstances such as injuries, employee dissatisfaction, or overwhelming stresses related to emergency response work could cause highly-trained employees to abandon their positions prematurely. Additionally, suppose a disproportionate number of employees were to resign or retire in a short period. In that case, overtime payroll costs necessary to provide community coverage could quickly eclipse any financial benefits that DPS models offer. Furthermore, due to requisite training, it would take a minimum of 18 months to restore the workforce to proper levels (depending on the rate of attrition). Although the acquisition of firearms and related training make up just a fraction of all DPS operational expenses, this model’s aggregate costs are likely cost-prohibitive for larger fire agencies.

3. Hastening Response Times

Comparing public safety agency response times, which equate to the arrival of a firearm on an emergency scene, produces a unique set of challenges. All jurisdictions possess several innate characteristics that impact emergency response. Daniel Bennett explains that “not only are there differences in physical distances, road networks, traffic conditions, but also the distribution of call locations.”¹⁸⁰ In sum, data comparisons between any two jurisdictions may, at first blush, appear to lack compatibility. Notwithstanding some subtle and other more apparent differences between emergency response organizations, comparative analysis remains a useful tool to measure agencies’

178. City of Sunnyvale, “Recruitment and Careers.”

179. Lee Romney, “Cross-Training of Public Safety Workers Attracting More Interest,” *Los Angeles Times*, January 1, 2013, <https://www.latimes.com/archives/la-xpm-2013-jan-01-la-me-sunnyvale-20130101-story.html>.

180. Daniel S Bennett, “Police Response Times to Calls for Service,” *Semantic Scholar*, November 2018, 15, <https://www.semanticscholar.org/paper/Police-Response-Times-to-Calls-for-Service-%3A-%2C-%2C-Bennett/a2155b563ee2f45a527b26d3e0fa5557c0b741d9>.

strengths and weaknesses against others that operate within the same emergency response sector.

The NFPA Standard 1710 delineates national fire sector response guidelines. The portion of that document which is most relevant to this discussion is the four-minute response requirement. NFPA 1710 mandates that the first fire unit dispatched to a medical or fire emergency arrive on the scene within four minutes 90% of the time.¹⁸¹ In contrast to the fire sector, Matt Halpin reports that law enforcement response for priority one calls involving life-threatening emergencies or dangerous crimes in-progress in ten major U.S. is at least a full minute and 20 seconds slower.¹⁸² Halpin further explains that both New York and Los Angeles response times top the six-minute mark, while San Jose’s law enforcement officers take more than nine minutes to arrive at pressing emergencies.¹⁸³ This dramatic disparity could result in the unnecessary loss of many lives. Angus Loten concurred and revealed that even modest reductions (less than 60 seconds), in 911 response times could save thousands of lives in the U.S. on an annual basis.¹⁸⁴

One of the more compelling reasons to adopt a Sunnyvale DPS system is its potential to reduce emergency response times dramatically. Whereas most jurisdictions require timely, coordinated responses from three separate emergency agencies to address violent crises, Sunnyvale’s Public Safety Officers are trained and equipped for immediate intervention upon arrival at such emergencies. Mata supports this claim and adds that few incidents from the mundane to the sensational are purely police, fire, or medical emergencies.¹⁸⁵

181. “NFPA 1710,” National Fire Prevention Association, accessed November 1, 2019, https://www.nfpa.org/Codes-and-Standards/ARCHIVED/Safer-Act-Grant/NFPA-1710_Sec_5.4.2.1.1

182. Matt Halpin, “What Is The Average Police Response Time in the US?” A Secure Life, January 29, 2019, <https://www.asecurelife.com/average-police-response-time/>.

183. Halpin, “What Is The Average Police Response Time in the US?”

184. Angus Loten, “911 Response Times Are Getting Faster Thanks to Data Integration,” *Wall Street Journal*, June 13, 2019, under sec .C, <https://www.wsj.com/articles/911-response-times-are-getting-faster-thanks-to-data-integration-11560468747>.

185. Mata, “The Contribution of Police and Fire Consolidation to the Homeland Security Mission.” 61.

Adopting a DPS model may not guarantee emergency responses that hit the four-minute mark required by NFPA 1710; however, using a DPS model might fill two current service gaps that place both emergency responders and the public in jeopardy. First, any shift toward fire service response times would have a positive impact on victim survivability. Second, scene safety can be vastly improved by ensuring that the first arriving DPS unit is equipped with a firearm to address lethal threats. National data indicates that fire service members will continue to arrive at most incidents ahead of LEOs. DPS frameworks eliminate the need to consider training fire service members with firearms independently of their LEO counterparts.

4. Urban versus Rural Efficacy

According to City Data, Sunnyvale has a 100% urban population of 153,656.¹⁸⁶ Sunnyvale's DPS employs roughly 200 Public Safety Officers that patrol nearly 23 square miles.¹⁸⁷ Sunnyvale enjoys a strong tax base, and the FY 2020/2021 budget has allocated more than \$103 million to fund the DPS.¹⁸⁸ Analysis of the FBI's most recent data for violent crimes in 2018 reveals that Sunnyvale's violent crime rate sits at just .93 per thousand people versus a national average of 2.47 for the same number of citizens.¹⁸⁹ In 2015, *Smart Asset*, using six metrics including violent crime rate, drug overdose rate, and percentage of the population engaged in excessive drinking, voted Sunnyvale, California, the safest city in America.¹⁹⁰

186. "Sunnyvale, California (CA 94086) Profile: Population, Maps, Real Estate, Averages, Homes, Statistics, Relocation, Travel, Jobs, Hospitals, Schools, Crime, Moving, Houses, News, Sex Offenders," City-Data, accessed April 23, 2020, <http://www.city-data.com/city/Sunnyvale-California.html>.

187. Kenny Choi, "Sunnyvale Chief Explains The City's Unique Duo Role Use Of Safety Officers," KPIX CBS, June 27, 2020, <https://sanfrancisco.cbslocal.com/2020/06/27/sunnyvale-chief-explains-the-citys-unique-duo-role-use-of-safety-officers/>.

188. "Adopted Budget, City of Sunnyvale, California—Fiscal Year 2020," City of Sunnyvale, accessed January 15, 2020, <https://sunnyvale.ca.gov/civicax/filebank/blobdload.aspx?t=60068.88&BlobID=27313>.

189. "Sunnyvale, CA Crime Rates and Statistics," Neighborhood Scout," accessed May 18, 2020, <https://www.neighborhoodscout.com/ca/sunnyvale/crime>.

190. Nick Wallace, "The 9 Safest Cities in America," CBS News, November 20, 2015, <https://www.cbsnews.com/media/the-9-safest-cities-in-america/>.

Despite its long history of success in Sunnyvale, the DPS framework might be even more appropriate in rural settings where personnel is more limited, operating budgets are smaller, and police response time are significantly greater. Additionally, data typically used to measure public safety success may be skewed in the case of Sunnyvale. Unusually low violent crime rates in Sunnyvale may be steered more by lofty property values, extraordinarily high average household incomes, and substantial tax revenues that bolster public safety efforts than the effectiveness of the DPS model used there.

5. Gun Laws, Politics and Local Attitudes

In 2020, Giffords Law Center reported that California has the most robust gun legislation among all 50 U.S. states.¹⁹¹ Therefore, it seems somewhat counterintuitive that a city like Sunnyvale would opt to arm its firefighting personnel. The answer to this may be in the nomenclature itself. The public, politicians, and Sunnyvale DPS membership do not consider DPS personnel to be armed firefighters. The non-traditional nature of Sunnyvale's public emergency structure nullifies the argument that firefighters should not carry weapons. Should trends continue and DPS models continue to proliferate, U.S. municipalities will likely grow to accept the incorporation of firearms into public safety as the norm regardless of regional gun laws, political stances, or traditional zeitgeists regarding armed firefighters.

6. Conclusions

Lori Moore-Merrell explains that effective fire emergency response performance is predicated upon availability, capability, and operational effectiveness.¹⁹² Presently, in the absence of firearms, fire agencies do not qualify as entities capable of appropriately addressing violent scenarios. Considering the statistical gap in fire and police response times, it may be prudent for many agencies to consider embracing a DPS model. However, although both fiscal constraints arising from COVID-19 and calls to reimagine U.S.

¹⁹¹. "Annual Gun Law Scorecard," Giffords Law Center, accessed October 12, 2020, <https://lawcenter.giffords.org/scorecard>.

¹⁹². "Author: Lori Moore-Merrell," Lexipol, accessed August 30, 2020, <https://www.lexipol.com/author/lori-moore-merrell-drph-mp/>.

policing may nudge some cities toward a Sunnyvale system, there are still many obstacles to implementation.

Morley and Hadley explain that the International Association of Firefighters (IAFF) and International Association of Fire Chiefs (IAFC) unions resist the idea of merging police and fire services.¹⁹³ Beyond the weakening of their respective constituencies through reduced numbers of personnel, fire agencies claim that police/fire service mergers typically deteriorate firefighting skills as law enforcement training considerations supplant them.¹⁹⁴ Suggestions to downsize and integrate would likely be met with similar resistance from law enforcement entities who might naturally want to protect their particular interests. Furthermore, despite being one of the most vocal advocates for Sunnyvale's DPS model, Sunnyvale Public Safety Chief Phan Ngo acknowledges that adoption of a Sunnyvale-style DPS requires "unique circumstances, capacity, and resources."¹⁹⁵ Jeremy Wilson and Clifford Grammich agree and point out that some municipalities are in the process of deconsolidating DPS organizations due to various failures in meeting community needs.¹⁹⁶ Unexpected occurrences of population growth, increasing call volumes, and the increasingly technical nature of both police and fire services are just a few of the reasons cited for deconsolidation of DPS organizations.

The DPS model appears to be appropriate for two vastly different types of cities. First, the model has flourished in Sunnyvale, California. This success might be attributed to the city's adoption of DPS practices when Sunnyvale was merely in its infancy. The city had time to grow into the model, and it is hard to say if such a merger of services would work in a substantially larger city. Additionally, Sunnyvale is an affluent community with a low crime rate and high property values. Substantial tax revenues in Sunnyvale have helped to eliminate many fiscal concerns such as lengthy, expensive training. Countless

193. Morley and Hadley, "Perspective."

194. Morley and Hadley, "Perspective."

195. Rhyssdal and Purser, "How One City Provides Public Safety without a Police Department."

196. Jeremy M. Wilson and Clifford A. Grammich, "Deconsolidation of Public-Safety Agencies Providing Police and Fire Services," *International Criminal Justice Review* 25, no. 4 (December 1, 2015): 374. <https://doi.org/10.1177/1057567715618590>.

other cities would lack the ability to absorb such costs. Similarly, lower crime rates allow Sunnyvale to operate more efficiently using a DPS methodology. Many other locales experience substantially higher call volumes for violent incidents than Sunnyvale, where the ten-year average for 2000–2019 sits at just over 181 violent crimes per year.¹⁹⁷ Higher crime jurisdictions would not be a good fit for this paradigm.

DPS would also work well in smaller jurisdictions, regardless of budget, where violent emergency calls occur at a similar rate. The shared administrative costs of DPS agencies make more sense for resource-strained areas than they do for a city like Sunnyvale. Finally, smaller fire departments are less likely to have large, strong unions that have had a history of impeding emergency service branch mergers.

C. LOVELAND, COLORADO, FIRE RESCUE AUTHORITY, TACTICAL RESCUE TEAMS

1. Background

In 1911, the Loveland Fire Department was created by merging two local, rival fire agencies.¹⁹⁸ Then on January 1, 2012, after the city of Loveland and the Loveland Rural Fire Protection District agreed to combine resources, the department was reconstituted again into the Loveland Fire Rescue Authority (LFRA).¹⁹⁹ Following operations at several complicated emergencies involving illegal drug laboratories, the LFRA decided to construct a unique unit know as a Tactical Fire Team to help assist the local Loveland Police Department (LPD) SWAT team at potentially volatile calls.²⁰⁰

Loveland’s TFT is a single dedicated company comprised of seven team members and a fire battalion chief who supervises all TFT calls. Loveland has acknowledged the need for contingencies when the designated TFT is engaged. Therefore, the LFRA has

197. Sunnyvale Uniform Crime Report,” City of Sunnyvale, accessed April 22, 2020, <https://sunnyvale.ca.gov/civicax/filebank/blobdload.aspx?BlobID=22968>.

198. “History,” Loveland Fire Rescue Authority, accessed August 20, 2020, <https://lfra.org/about-us/history/>.

199. Loveland Fire Rescue Authority, “History.”

200. Vargas, “Tactical Firefighter Teams.”

further supplemented TFT manpower by training a handful of additional firefighters assigned to LFRA units outside of the TFT. These members can be called upon to bolster any particular TFT operation or respond to secondary or tertiary emergencies. As per LFRA's operational protocols, the TFT's primary functions are to support SWAT operations at 1) active shooter incidents, 2) barricade situations, 3) clandestine labs, 4) hostage rescue, 5) mutual aid requests from LPD SWAT, and 6) other missions based on needs of LPD SWAT (i.e., VIP details, motorcades, etc.).²⁰¹ Finally, Vargas suggests that TFTs like Loveland's offer a "possible mitigation strategy for hostile incidents requiring firefighting services in the midst of a law enforcement incident."²⁰²

2. Costs

Expenses associated with the addition of TFTs in Loveland are minimal compared to a DPS system like Sunnyvale, California. First, recruiting members is a seamless, cost-free enterprise as TFT participants are selected from LFRA's rank and file members. Second, training members for inclusion on TFTs does not require comprehensive law enforcement academy training. The average length of a U.S. police training program (outside of field training) sits at approximately 840 hours or 21 weeks.²⁰³ Brett Meade reported that the cost of recruiting, equipping, and training a single police officer can exceed \$100,000.²⁰⁴ By comparison, Loveland's TFT members are only required to meet basic SWAT school standards, negotiate a bi-annual physical agility course, and complete less than a dozen monthly training hours with the LPD SWAT team.²⁰⁵ Last and most notably, TFT members are *not assigned firearms*. Although TFT members attend SWAT school and must demonstrate proficiency with all SWAT firearms, they do not carry

201. "Fire Rescue Services," Loveland Fire Rescue Authority, accessed October 20, 2020, <https://lfra.org/our-services/fire-suppression-operations/fire-suppression-services/>.

202. Vargas, "Tactical Firefighter Teams," 27.

203. "Police Training 101 Guide," Apex Officer, accessed August 10, 2020, <https://www.apexofficer.com/police-training>.

204. Brett Meade, "Recruiting, Selecting, and Retaining Law Enforcement Officers," National Police Foundation, March 17, 2016, <https://www.policefoundation.org/recruiting-selecting-and-retaining-law-enforcement-officers/>.

205. Vargas, "Tactical Firefighter Teams," 28.

weapons on duty. TFT weapons training is promoted so that tactical firefighters can secure all guns at the scene of emergencies. Loveland Division Chief Greg Ward adds that firefighters are also capable of defending themselves with a firearm if a SWAT member becomes incapacitated.²⁰⁶

In short, firearms use for Loveland's TFT is a last resort for infrequent and unusual circumstances. This approach varies significantly from many fire agencies where firefighters are integrated with police and medical personnel in Rescue Task Forces (RTFs). Typical fire task forces are not trained in firearm use. They are prohibited from discharging firearms and are discouraged from securing loose or unaccounted for weapons.²⁰⁷

Thus far, Loveland has resisted the temptation to fully train TFT members as law enforcement officers. LFRA has also intentionally opted to refrain from purchasing firearms for TFT personnel. The combined savings to the department sit at roughly \$100,500 per TFT operator. Not only do ongoing drills and training that combine Loveland SWAT and LFRA TFTs come with a much smaller price tag than traditional LEO training, but this model acts as a compromise between models that arm firefighters and models that do not. While traditional RTF models ignore the possible need for firearms use, Loveland TFT operators are expected to secure or discharge SWAT weapons as an appropriate response to life and death scenarios.

Kindy et al. reported that U.S. law enforcement officers shoot nearly 1,000 citizens per year.²⁰⁸ Furthermore, according to Bret Mock, every year U.S. municipalities spend tens of millions of dollars paying complainants for excessive use of force claims.²⁰⁹

206. Greg Ward, "Beyond the Traditional Fire-Rescue Mission: Loveland's TAC Fire," FireRescue1, August 22, 2020, <https://www.firerescue1.com/mass-violence-enhanced-training-emerging-threats/articles/beyond-the-traditional-fire-rescue-mission-lovelands-tac-fire-h0Rkl8nKKGKz6WdgY/>.

207. Hart, "What Is NFPA 3000?"

208. Kimberly Kindy et al., "Police Shootings," *Washington Post*, December 26, 2015, <https://www.washingtonpost.com/policeshootings/>.

209. Brent Mock, "How Cities Offload the Cost of Police Brutality," Bloomberg, June 4, 2020, <https://www.bloomberg.com/news/articles/2020-06-04/the-financial-toll-of-police-brutality-to-cities>.

Although not all excessive use of force claims are gun-related, the use of firearms invites potentially significant financial liabilities. LFRA's tactical framework provides for its members' safety while avoiding the expenses associated with excessive force claims tied to weapons. Thus, this model may be most appealing for risk-averse cities that do not have the financial wherewithal to engage in costly legal cases and payouts that stem from firearm use.

3. Response Times

Loveland's current guidelines for TFT response are insufficient to deal with time-sensitive emergency events. LFRA's tactical team structure does not support independent engagement by tactical teams at hostile events. This means that even tactically trained firefighters are required to await law enforcement's arrival before intervening in violent incidents. Moreover, because TFTs are in service for routine calls for help, dedicated tactical members might be previously engaged when their assistance is most needed. Loveland does have a back-up pool of tactical team trained members. However, coordinating their formation for emergency responses would invariably lead to significant delays in response times. The current method for contacting off-duty, trained TFT members is via phone call or text message.²¹⁰

While the NFPA 1710, four-minute response standard would still apply to Loveland's regular fire service members, that requirement does not apply to specialized units akin to Loveland's TFTs. Surprisingly, under Loveland's latest operational manual, TFT members are required to respond within less than *one hour* of notification of an emergency incident.²¹¹ This generous allowance for response is grossly inadequate as the American College of Surgeons stresses that severely bleeding wounds can cause death in as little as five minutes.²¹²

210. Ward, "Beyond the Traditional Fire-Rescue Mission."

211. Ward, "Beyond the Traditional Fire-Rescue Mission."

212. "Learn More," Stop The Bleed, accessed September 1, 2020, <https://www.stopthebleed.org/learn-more>.

4. Urban versus Rural Efficacy

The LFRA is an interesting case study in that the department was born of the merging of a city fire agency and a separate rural fire organization. This blending implies that the LFRA is comprised of the most useful traits (equipment and operational) of both types of fire services. The strength of the LFRA TFT model lies in its ability to address various emergency scenarios that require the combined expertise of fire and police services. Since TFT members consistently train alongside police SWAT counterparts across multiple emergency scenarios, they should operate well in both urban and rural settings.

The biggest drawback of this model, regardless of setting, is the unpredictable availability of tactically trained units. As long as TFT forces are still required to answer routine calls for assistance, their readiness will remain in doubt. High call volumes commonly experienced in larger cities would necessitate an expansion of the TFT model to several units. Development of the system to ensure proper coverage and availability would cut into the program's cost-savings benefits. Nonetheless, the model's adoption would still result in massive savings on training, weapons, and legal liability compared to a DPS framework.

The most problematic facet of a TFT model in a rural setting is slow reflex time. The geography of sprawling rural areas could significantly hinder the response and formation of TFTs. As previously indicated, Loveland allows up to one hour for TFT members to ready themselves. Thus, the random nature of many acts of violence coupled with the medical necessity for rapid bleeding intervention and medical care indicate that the TFT model is not an ideal fit for patient survivability in rural settings. Instead, when practiced outside of concentrated response areas, Loveland's TFT model is most appropriate for use at preplanned operations or other incidents that are not time-sensitive.

5. Gun Laws, Politics and Local Attitudes

A Gifford's Law Center report ranks Colorado 14 out of 50 states in gun safety.²¹³ Colorado is a *shall-issue* state, where local sheriffs are mandated to issue permits to those

213. Giffords Law Center, "Annual Gun Law Scorecard."

who meet firearms requirements immediately.²¹⁴ Open carry and concealed carry of firearms are also legal in Colorado, except for Denver and a handful of other posted locations.²¹⁵ Colorado is also one of 23 “Castle Doctrine” states.²¹⁶ This means that gun owners have no responsibility to retreat before discharging a firearm in their home, vehicle, or workplace if they are defending themselves against an intruder.

One of the most appealing aspects of Loveland’s TFT system, regarding attitudes toward guns, is that it straddles the line between gun advocacy and gun rejection. Politicians and citizens alike can support a TFT framework without feeling like they are taking a polarizing stance. Gun advocates can take comfort in knowing that TFT members are offered some measure of protection by being trained with all SWAT weapons. In the alternative, those who oppose firearms can remain satisfied that TFT members are not issued weapons and may only use a gun under a particular set of circumstances. This model offers the possibility of an equitable compromise where many other fire sector models do not. The TFT approach appears to provide the most diplomatic solution to arming members of the fire service. Therefore, the TFT model may receive more political and public support than many alternatives.

214. “What Is ‘Shall Issue?’” Concealed Coalition, accessed August 22, 2020, under “LEARN” and then the “Types of Licensing and Permitting,” <https://concealedcoalition.com/gun-laws/what-is-shall-issue/>.

215. “Concealed Carry Reciprocity Map,” U.S. Concealed Carry Association, accessed September 2, 2020, https://www.usconcealedcarry.com/resources/ccw_reciprocity_map/co-gun-laws/.

216. World Population Review, “Castle Doctrine States 2020,” accessed July 18, 2020 <https://worldpopulationreview.com/state-rankings/castle-doctrine-states>.

6. Who Else Is Using This Model?

Cities such as New York, Naperville, Chicago, and Coral Springs, Florida, have all implemented their own brand of integrated tactical response teams.²¹⁷ Like the LFRA, many jurisdictions have identified the need to coordinate emergency scene entry, patient packaging, and victim removal with law enforcement agencies. However, what sets the LFRA apart is that its personnel are trained to handle the full-compliment of SWAT weapons in use at operations. This means that should the need arise, they are authorized to use guns as a means of defense or escape.

Although the NFPA ASHER 3000 standard encourages national adoption of integrated fire and police RTFs, the standard maintains a clear separation of fire and police responsibilities. Under ASHER 3000, law enforcement agents alone are tasked with force protection. Conversely, fire sector operators are responsible for patient care and removal. NFPA endorsement of rapid entry and intervention by RTFs suggests national support for this model will grow. For the time being, Loveland's TFT will likely remain an outlier program until it can gain the backing from an agency such as the NFPA.

7. Conclusions

The TFT model provides a less dramatic shift in fire sector resources than a DPS model. TFTs do not take on law enforcement responsibilities, nor are they solely dedicated to violent or tactical emergency responses. Instead, the specialized group continues to engage in standard medical and fire responses during daily operations. This model's ambivalent nature could lead to greater stakeholder support than more polarizing options such as DPS or concealed carry practices.

217. Author's experience and knowledge in part from New York City Fire Department's internal document, "Interagency Response Protocol to Incidents Involving Aggressive Deadly Behavior, Fire Tactics and Procedures: Emergency Response Plan Addendum 3a"; Genevieve Bookwalter, "Naperville Firefighters Forming Elite Response Team," *Chicago Tribune*, March 5, 2019, <https://www.chicagotribune.com/suburbs/naperville-sun/ct-nvs-naperville-fire-tactical-emergency-team-st-0306-20160305-story.html>; "Special Ops - Special Response Team/Tactical SRT," City of Coral Springs, accessed October 10, 2020, <https://www.coral springs.org/government/other-departments-and-services/fire/about-us/specialty-unit/special-ops-special-response-team-tactical-s-r-t-paramedic>.

The recent enactment of a national tactical team standard in NFPA 3000, which prohibits firearms use by firefighters, does not reflect either a rejection or acceptance of Loveland's TFT model. Though NFPA 3000 currently denies firefighters the use of weapons, it does acknowledge the often-simultaneous need for both firearms and fire sector services at hostile events. Simply stated, the ASHER 3000 standard insists on the integration of police and fire resources. Perhaps the guideline may be revisited at a later time to include firearms training in the image of Loveland's TFT.

D. CONCEALED CARRY FRAMEWORK

1. Background

The concealed carry framework is the most liberal of the three models considered in this chapter. Concealed carry strengths and weakness are tightly coupled. In one sense, allowing licensed fire personnel to bring their own weapons into the work setting alleviates the financial pressures of outfitting personnel with guns and providing associated training. Conversely, using this model, fire agencies forfeit control over who can carry a firearm, the types of guns being held, and how many guns are present at any particular emergency response.

Advocates of the concealed carry model support Jason Lyon who asserts that an increase in the number of firearms, growth in the numbers of potentially armed people, the relaxation of the rules of engagement in the use of deadly force, and a lack of faith in the government's ability to protect the citizenry have made the emergency-response landscape dangerous for law enforcement and emergency services personnel.²¹⁸ Lyon also contends that ubiquitous crisis events involving firearms now preclude firefighters from maintaining safe standoff distances as they are increasingly called to enter warm zones alongside law enforcement agents.²¹⁹ The concealed carry model has gained traction in recent years, most

218. Jason Lyon, "Convergence, Guns, and the Public Safety Response," master's thesis, Naval Postgraduate School, 2019), <https://calhoun.nps.edu/handle/10945/63478>.

219. Lyon.

notably in Florida following the delayed and ineffectual medical interventions at the Marjory Stoneman High School shooting in Parkland.²²⁰

In Virginia, Senator Amanda Chase, the mother of an emergency medical technician (EMT), has sponsored a bill in the Virginia Senate that would allow firefighters, EMTs, and paramedics to carry weapons.²²¹ Chase explains that firefighters and EMS personnel may need to defend themselves, especially at the scene of a violent incident. She asserts that the availability of force protection may prove to be even more imperative in Virginia's rural areas where law enforcement is spread thin and are often delayed in arriving at emergencies.²²² Virginia and Georgia are not unique in seeking carry policies for firefighters. Other states, including Kansas, Ohio, and Tennessee, currently allow department members to carry concealed weapons to defend themselves.²²³ Additionally, Mississippi and Texas have proposed bills with similar aims.

2. Response Times

If leveraged to its maximum capability, the concealed carry framework could match the Sunnyvale DPS response times. Upon arrival, fire service members, following hidden carry practices, would be immediately available to address violent situations. However, under a concealed carry program, the decision to carry a firearm rests with each firefighter. Therefore, available force-protection would not be guaranteed.

Currently, comprehensive data on firefighter's collective position on carrying weapons is lacking. Therefore, it is impossible to determine the percentage of firefighters who would opt for carrying a firearm with any degree of accuracy. That said, a 2020 poll of EMTs and paramedics conducted by EMS1 revealed that only 59% of respondents

220. Jenni Fink, "Florida Bill Would Allow Paramedics to Carry Guns When Responding to Mass Shootings at Schools," *Newsweek*, March 26, 2019, <https://www.newsweek.com/florida-bill-would-allow-paramedics-carry-guns-when-responding-mass-shootings-1375429>.

221. Vozzella, "Virginia Senate Passes Bill Allowing Firefighters and EMTs to Carry Weapons."

222. Vozzella, "Virginia Senate Passes Bill Allowing Firefighters and EMTs to Carry Weapons."

223. Everyone Goes Home, "16 Firefighter Life Safety Initiatives."

thought firearms were an appropriate tool for use in the prehospital medical care setting.²²⁴ Although EMT and paramedic support for carrying firearms is more than triple that of U.S. educators, a lack of total commitment to this model would assuredly lead to unreliable weapons availability.²²⁵ Nonetheless, if 60% of firefighters were to be armed, the concealed carry model would most often be more responsive than Loveland's TFT system. A concealed carry program would place at least one firearm at the scene of a violent incident well in advance of Loveland's one-hour allowance for TFT response.

3. Urban versus Rural Efficacy

The concealed carry model would be most useful in rural settings. This is not to say that the model is ineffective or inappropriate within urban environments. Instead, the adoption of concealed carry policies addresses commonly encountered rural problems such as a more limited law enforcement presence, slower law enforcement response times, and larger response areas. By comparison, most urban areas enjoy larger, more well-funded police forces, faster response times, and smaller response areas.²²⁶

Another compelling reason for rural jurisdictions to pursue concealed carry doctrines is improved intervention times at medical emergency calls. Research conducted by Ahmed Ramdan M. Alanazy et al. confirms that prehospital medical response times are slower in rural areas resulting in lower survival rates for trauma patients.²²⁷ Fire personnel responding in a medical capacity must reduce patient access and removal times to lower

224. Greg Friese, "Paramedics Want Guns on Duty. What Comes Next?," EMS1, February 24, 2020, <https://www.ems1.com/safety/articles/paramedics-want-guns-on-duty-what-comes-next-N5TENdqTbD9fsx5p/>.

225. Batsche, "School Safety."

226. Lauren Weisner, H. Douglas Otto, and Sharyn Adams, "Issues in Policing Rural Areas: A Review of the Literature," ICJIA Research Hub," March 18, 2020, <https://icjia.illinois.gov/researchhub/articles/issues-in-policing-rural-areas-a-review-of-the-literature>.

227. Ahmed Ramdan M. Alanazy et al., "Factors Impacting Patient Outcomes Associated with Use of Emergency Medical Services Operating in Urban Versus Rural Areas: A Systematic Review," *International Journal of Environmental Research and Public Health* 16, no. 10 (January 2019): 1728, <https://doi.org/10.3390/ijerph16101728>.

these mortality rates. Concealed carry practitioners can provide the force protection needed for swift entry and immediate patient care during hostile events.

Although 97% of the United States is considered rural, only 19% of citizens live in rural areas.²²⁸ Therefore, the implementation of concealed carry methods exclusively in rural areas would benefit only one in five Americans. Nonetheless, the model is a good fit for rural regions and may be best tested and fine-tuned within jurisdictions that operate outside of urban locales. Through an iterative process of using, learning, and adjusting, fire organizations located in more rural areas may perfect protocols that might serve all fire service agencies regardless of geography.

4. Gun Laws, Politics and Local Attitudes

Concealed carry, in some form or fashion, is allowed in all 50 U.S. states. However, some states can either refuse to grant concealed carry permits or make it exceedingly difficult to acquire a license.²²⁹ Fifteen constitutional carry states currently allow anyone of legal age to carry a concealed firearm without a permit.²³⁰ Furthermore, there are 27 shall issue states that require a permit to carry a concealed weapon.²³¹ However, such concealed carry permits must be issued to applicants that meet the standards set by state laws without any requirement to show a particular need for a firearm. The remaining states are known as “may issue” jurisdictions. This means that states have discretion in whether they choose to issue concealed carry permits on a case by case basis.

States that allow citizens to carry concealed firearms outnumber those who may prohibit the practice by more than a five to one ratio. The liberal use of concealed carry legislation in so many regions of the country is indicative of the general public acceptance of the practice. However, Mark Gius’s recent research revealed that states with more

228. “What Is Rural America?,” United States Census Bureau, December 2016, <https://www.census.gov/library/stories/2017/08/rural-america.html>.

229. “Concealed Carry States 2020,” World Population Review, accessed July 18, 2020, <https://worldpopulationreview.com/state-rankings/concealed-carry-states>.

230. World Population Review, “Castle Doctrine States 2020.”

231. “Concealed Carry,” Giffords Law Center, accessed October 5, 2020, <https://giffords.org/lawcenter/gun-laws/policy-areas/guns-in-public/concealed-carry/>.

relaxed conceal carry laws experienced 12.9% higher gun-related murder rates than less permissive states.²³²

Compelling gun-violence statistics may eventually lead to the tightening of conceal carry laws. Nonetheless, it is probable that support for this model within the fire sector will likely mirror public attitudes toward citizen's conceal carry rights within each region.

5. Who Else is Using This Model?

Presently, there is no comprehensive tracking of conceal carry practices within the fire sector. Agencies such as the NFPA, NIOSH, OSHA, and USFA have all ignored the steady stream of proposals for integrating a concealed carry option into fire organizations across the United States. Additionally, the same agencies seem to have overlooked *ongoing* concealed carry operations in at least eight states.

It is difficult to determine what factors might trigger further adoption of concealed carry models across the United States. That said, Florida is an example of a jurisdiction that adopted conceal carry protocols as a reaction to a heinous mass shooting. Following initial gunfire at Marjory Stoneman Douglas High School in Parkland, Florida, preliminary patient contact by unarmed fire/paramedics took as long as 43 minutes.²³³ Hence, public and political dismay over that delayed response propelled the swift proposal and enactment of concealed carry laws.

Forthcoming acceptance of concealed carry policies may depend on future violent crime rates. In particular, emotionally charged tragedies like mass casualty incidents appear to prompt the type of legislative changes needed for concealed carry adoption. Additionally, data on concealed carry safety and efficacy will emerge from the handful of vanguard states. This information will undoubtedly influence other jurisdiction's views on the feasibility of this model.

232. Mark Gius, "Using the Synthetic Control Method to Determine the Effects of Concealed Carry Laws on State-Level Murder Rates," *International Review of Law and Economics* 57 (March 1, 2019): 1–11, <https://doi.org/10.1016/j.irl.2018.10.005>.

233. Fink, "Florida Bill Would Allow Paramedics to Carry Guns When Responding to Mass Shootings at Schools."

6. Conclusions

The Sunnyvale DPS model, the Loveland TFT model, and concealed carry models considered here are only three options for U.S. fire agencies to consider. There are a virtually unlimited number of potential variations on these three models and many more beyond them based on permutations of alternative models. These three frameworks are offered as a starting point for contemplation and are meant to highlight some critical facets of firearms programs.

U.S. fire agency decision-makers will continue to grapple with an array of challenges if they opt to engage in arming fire personnel. Regardless of what firearm system is scrutinized, the programs' costs, impacts on response times, and the best application for rural versus urban settings will have to be weighed. Likewise, political, public, and legislative influences will continue to guide decisions in this arena. Arming fire sector personnel is a complex decision. The comparative analysis of contrasting models addressing congruent concerns helps untangle this knotty debate.

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V. CONCLUSION

A. **SUMMATION: AFTERMATH AND OBSTACLES OF CHOOSING FIREARMS PROGRAMS**

Although there is no national consensus on whether firearms are an appropriate tool for fire sector personnel, U.S. fire agencies continue to incorporate weapons into their response matrices. This thesis acknowledges that support for gun-carry programs is by no means universal. Nonetheless, as fire sector stakeholders struggle to address public safety issues, many agencies continue to embrace firearms programs. The lack of consolidated guidance from safety organizations, governmental bodies, and fire sector pundits alike validates the need for this comparative analysis.

The purpose of this Policy Options Analysis is to provide fire sector decision-makers and other stakeholders with critical information that can be leveraged to improve deliberations regarding firearms programs. While many fire agencies continue to absorb myriad responsibilities associated with firearms use, many do so with an incomplete understanding of the process. To state that, in general, the fire sector's knowledge of firearms policies is imperfect is not to place blame on fire service practitioners. Instead, a lack of participation by those outside the fire service has led to misconceptions about firearms programs' complexity. Governmental bodies, safety organizations, and the public have all done a poor job contributing to policy development. The silence of legislators and safety agencies alike has created a vacuum of information pertaining to firearms in the fire service; this document attempts to fill that void.

This thesis has defined some of the most relevant factors for fire agencies to consider as they weigh the viability of firearms policies. Research conducted here has substantiated the need to consider both law enforcement and education sector gun-carry policies. Fire entities should study police and school gun models because all three sectors share a common problem space. Furthermore, the study of Sunnyvale, Loveland, and concealed carry models offers a sample of diverse and practical approaches to addressing an array of violent emergency scenarios. Fire agencies might turn to any or all of these policies for guidance during the initial policy building stages.

This chapter catalogs key aspects of previous chapters. First, barriers to and consequences of fire service firearms programs will be discussed. Second, crucial takeaways from research related to law enforcement, education sector, and governmental influence will be reexamined. Third, DPS, TFT, and conceal model implications will be distilled. Finally, the four most remarkable findings of this thesis are enumerated. Those notable conclusions are

1. Education program models are the safest for gun training, storage, and handling.
2. The federal government is capable of establishing national firearms policies for the fire sector.
3. National safety agencies need to be more active in setting and enforcing fire service workplace standards.
4. Fire agencies can gain more support for firearms programs by either rebranding their agencies or by retitling their employees.

There are several impediments and many consequences for fire agencies that choose to add firearms to operational catalogs. For one, fire organizations must convince stakeholders that weapons are a necessary tool before they can introduce them. Citizen support for gun programs cannot be assumed. Since current data indicates that fire sector injuries and deaths are typically unrelated to gun violence, justifying weapons models will remain a challenge.

Should the hurdles of public and political backing be cleared, resource allocation could cause further friction in establishing fire carry models. Among other costs, proposed budgets will have to account for the procurement, training, and maintenance of handguns. Cash-strapped municipalities that wish to move forward with firearms models will likely have to compromise on some aspects of firearms programs. Perhaps resource-strained departments will reduce costs with shorter training programs, cheaper firearms, or less costly oversight protocols. Furthermore, municipalities may be forced to steer away from their preferred model and toward one that can land within budgetary boundaries.

Undoubtedly, the incorporation of firearms models into any jurisdiction will force some tough financial decisions.

Heavy responsibilities lie beyond the establishment of gun-carry programs. Fire agencies must understand that they take on substantial liabilities when arming personnel. Lost, stolen, or misused weapons are just a few of the potential paths leading to additional financial burdens via costly litigation. Moreover, fire departments must acknowledge that even adequately trained operators frequently miss their intended targets. Thus far, data consistently confirms that stellar marksmanship among trained LEOs is an anomaly. Superior aim in operational settings while under duress is typically aspirational and is seldom realized.

It is unlikely that this particular policy analysis will be sufficient to suit all fire agencies' needs. Many fire sector decision-makers could insist that their community's requirements are so unique that they warrant tailor-made firearms carry policies. However, given the general lack of literature regarding firearms policies in the fire sector, this policy analysis is worthy of inclusion in deliberations on the matter. The information amassed here can stimulate conversations that might produce safer, more economical, and more widely accepted gun-carry practices within the fire sector.

B. EVALUATION OF THE LAW ENFORCEMENT SECTOR

Fire sector organizations should not haphazardly model gun-carry programs in the image of law enforcement agencies. Although U.S. policing entities have the most extensive history of firearms use among emergency response agencies, the law enforcement sector struggles with firearm-related policy issues. Law enforcement pundits and practitioners alike disagree on what constitutes adequate weapons training. Additionally, inconsistent gun storage practices within the law enforcement community have led to many lost, stolen, and misused handguns. Moreover, most law enforcement organizations have historically abysmal accuracy rates when discharging firearms. Fire agencies must improve upon these perennial weaknesses of law enforcement models.

Generally speaking, most of the nation's 18,000 law enforcement agencies do not exemplify ideal firearms programs. However, fire sector policymakers should not discount

some of the more effective police gun programs. Police departments with the most comprehensive firearms training and best safety records should still be considered potential fire organizations' templates. Also, even those police agencies with the poorest firearms track-records might serve as examples of frameworks to be avoided.

Inadequate funding is one of the biggest obstacles to gun safety training and effective policy practices. It simply may not be possible for many fire agencies to fashion their programs to meet the standards of superlative police agencies. For example, the Sunnyvale, California, DPS, which enjoys consistently low crime rates, represents an affluent population. It is doubtful that most U.S. municipalities could or would match such a city's public service budgets. Citizens and budget planners will have to agree to compromises on firearms frameworks if they hope to build financially sustainable programs.

On balance, the law enforcement sector's spotty gun-safety history indicates that fire service gun-program architects can learn more from LE mistakes than from LE successes. Collectively, perennial LE errors such as unintentional discharges, tactical shooting mistakes, and friendly fire mishaps have been far too commonplace. Likewise, LE personnel have long-standing issues with both marksmanship and gun storage compliance. Nonetheless, those highly proficient LE gun experts and LE organizations renowned for best gun-carry practices remain valuable resources for organizations in need of direction.

C. EVALUATION OF THE EDUCATION SECTOR

Debates over arming teachers reveal many of the same concerns as those found when discussing fire sector firearms programs. Thus far, the most remarkable aspect of armed teacher programs is their nearly flawless safety records. Therefore, when opting for handguns, fire agencies should mimic the firearms practices of school districts. Since school models have proven to be universally effective throughout the United States, fire agencies should consider replicating local schools' frameworks that serve the same communities they do. Fire departments might benefit from reproducing protocols that have already been deemed safe and effective within their jurisdictions. Furthermore, community

familiarity with established gun-carry policies could help reduce anxiety and resistance to the idea of arming firefighters.

The most glaring weakness of education sector firearms policies is a general lack of support from the teachers. Teachers who repudiate firearms proposals outnumber those who advocate for guns in classrooms at a four to one ratio. Similar to teachers, fire personnel are civil servants that lack a long-standing relationship with weapons. Likely, fire department employees and the unions that protect many of them would resist gun carriage proposals. Fire organizations must gauge the willingness of employees to carry sidearms before attempting to insist upon their use.

1. Assessment of Government's Role

The enumerated powers of Congress outlined in the U.S. Constitution effectively preclude the federal government from dictating national gun-carry policies. Although several federal gun-related acts have come to pass, none establish guidelines for the carriage of weapons within fire service organizations. The historical lack of legislative collaboration among federal stakeholders in governing gun policies indicates that best practices will continue to be determined by state-level partners. Nonetheless, LEOSA legislation enacted post 9/11 proves that the establishment of a national gun policy is possible when urgent public safety concerns warrant it.

The asymmetrical nature of U.S. state gun regulations reflects an uneven tolerance for firearms across the nation. For the time being, interstate cooperation is still lacking, and state legislators will continue to back gun policies that only consider their respective states' needs. However, all hope of future collaboration is not lost. Universal state cooperation on several federal firearms acts and the relatively new LEOSA legislation hint at the potential for future interstate partnerships. It is possible that in time, through an iterative process, best firearm carry practices might emerge that will suit the needs of many or all states. Until such a time, the status quo is likely to produce disparate practices among U.S. states.

2. Recap of Safety Agencies

U.S. safety agencies that regulate fire organization workplaces have abandoned their responsibility to direct gun-carry policies. All evidence suggests that the misstep is intentional rather than accidental. Since safety agencies refuse to offer concise explanations for their lack of participation, one can only speculate why they choose to withdraw from this conversation. One likely cause of this collective inertia is the highly polarizing nature of the gun control debate. Fear of coming down on the wrong side of this gun dilemma has had a chilling effect on agencies such as OSHA, NIOSH, USFA, and the NFPA, and so they continue to retreat from the gun-related discourse. Safety-agency abstention is a critical error that should be corrected.

Since not one of the agencies discussed here has opted to take ownership of this problem, perhaps one solution is for the federal government to assign the responsibility. These agencies are typically eager to guide myriad workplace safety issues, and so it makes little sense that they should all withhold input on firearms policies. A review of the agencies noted above reveals that the NFPA's influence should be leveraged to establish gun-carry policies within the fire sector. Relative to other safety agencies, the NFPA has produced unparalleled success in setting fire sector standards and coordinating compliance across the broad swathe of fire industry organizations.

D. OPTIONS ANALYSIS LESSONS LEARNED

1. Review of Sunnyvale's Department of Public Safety

Sunnyvale, California, has demonstrated the soundness of a hybrid DPS methodology for decades. DPS practitioners can rest easy knowing that the first arriving DPS officer to any violent emergency will have a firearm readily available. However, providing that weapon and sustaining the DPS model is an expensive proposition. Additionally, less than 150 U.S. cities have turned to a DPS model to address public safety concerns, implying that the model is not a good fit for most U.S. municipalities. Moreover, as some cities look to consolidate public services, several others are deconsolidating their integrated (police/fire) departments.

Cities that believe a DPS framework is the most economical way to provide emergency services must be alert to the enormous training costs of DPS programs. Additionally, decision-makers should also look carefully at the budgets, response areas, personnel pools, and call volumes of jurisdictions that employ DPS practices. The DPS methodology may only prove cost-effective for cities with very particular sets of needs and resources.

2. Takeaways from Loveland's Tactical Firefighting Teams Model

Loveland, Colorado's TFT platform may appeal to the broadest audience. In one respect, Loveland TFTs answer the concerns of those opposed to guns in the fire service. The TFT protocols used in Loveland significantly limit the authorized use of firearms. Loveland firefighters do not carry sidearms while responding to routine calls, and the discharge of firearms by TFT members is prohibited until particular criteria are met. Conversely, gun advocates might appreciate that Loveland is thoughtful and proactive by providing their TFTs with firearms training. Loveland has demonstrated its intention to protect first responders and the public by integrating Loveland SWAT and Loveland TFT members during training and operations.

The TFT model is best suited to fire agencies that do not want to wholly commit to firearms programs. In a sense, this model splits the difference between arming and not arming fire service members. Also, training alongside police SWAT operators offers fire TFTs an intimate view of the equipment and training needed to address violent emergencies that require the presence of firearms. Fire department administrators can monitor Loveland's integrated training exercises and operations to help decide if a fully dedicated firearm program makes sense for their organizations.

The biggest drawback of a TFT proposal is its failure to guarantee rapid responses to pressing emergencies. Loveland's firefighting operational guide concedes that TFT members are allotted up to one hour to arrive on the scene of an urgent situation. Most fire organizations would not embrace this timeline. Fire agencies would need to dramatically expand this model to ensure the immediate availability of members and equipment. Unfortunately, the additional manpower and equipment required to allow for effective

responses are costly. Thus, correcting TFT resource shortfalls would result in increased expenses, diminishing the model's overall appeal.

3. Concealed Carry Summary

In recent years, a surge in the number of mass casualty incidents has led to the adoption of concealed carry policies by several U.S. states. Virginia, Georgia, Kansas, Ohio, Florida, and Texas are just a handful of states that allow fire personnel to carry concealed weapons as a means of protection. Currently, there is insufficient data to determine if concealed carry policies are meeting performance expectations. As time passes and more robust data emerges on the efficacy of concealed carry policies, state-level stakeholders will be able to make more informed adjustments to hidden carry programs. States will need to assign an existing entity the chores of collecting and processing this invaluable information or, in the alternative, establish a new agency to accomplish those tasks.

Conceal-carry systems benefit fire agencies and fire personnel in several ways. First, conceal-carry models afford the most flexibility for fire service members. Secondly, concealed carry is an optional framework. Those employees who wish to arm themselves can do so without fear of sanctions. Alternatively, concealed carry policies accommodate personnel that choose to operate without firearms as well. This system is unique in that it can satisfy the individual preferences of most employees. Aside from offending employees who might prefer to work in an utterly weapon-free environment, conceal carry succeeds in offering diametrically opposed options, whereas DPS and TFT models do not. Finally, conceal carry models also make economic sense for agencies that want to eliminate firearms training and procurement costs.

There are some crucial tradeoffs for the savings realized through the use of concealed carry systems. By adopting conceal carry, fire agencies relinquish control over who is carrying firearms at any given time. Since having a weapon becomes optional, determining the number of firearms at an emergency becomes guesswork. The lack of one standard policy effectively undermines confidence that a gun will be available if needed. Additionally, although fire agencies do not provide guns for employees, they can still be

held liable for accidental discharges or inappropriate use of force scenarios. Furthermore, given that concealed carry training would occur outside of a fire organization's purview, the agency would have to accept responsibility for personnel training inconsistencies.

E. LIMITATIONS

The consideration of many alternative firearms policies to those studied here is beyond the scope of this thesis. However, as so many fire agencies have settled upon using one of the three frameworks explored here, it is fair to say that all three are worthy of making the shortlist for policy consideration. Additionally, this thesis's scope did not allow for comparing how or even if these three models are superior to other proposed policies. The author concedes that other gun models may contain useful approaches to safely and effectively incorporate firearms into fire organizations. Instead of excluding alternative gun-carry plans not covered by this research, the author suggests such policies be weighed alongside the models already put forth here for their ability to address any needs that might have been overlooked.

A stronger case could have been made for the rejection of firearms programs altogether. Indeed, statistical data for the last decade reveals that just one firefighter is killed by gunfire annually. Moreover, although all shooting deaths are tragic, thus far, there is no evidence that the presence of a firearm can guarantee personnel safety at violent incidents. This thesis briefly acknowledges the possibility that weapons may be inappropriate for use within the fire sector. However, this research's main thrust assumes that many fire agencies *want* to incorporate firearms into operational practices. In sum, this analysis is not intended to dissuade decision-makers from rejecting firearms policies. Instead, this evaluation of gun programs is meant to flesh out some of the most relevant conversations surrounding the decision to choose one firearm model over all others. Admittedly, choosing no model at all may indeed be the best course of action for most, if not all, fire agencies.

Like so many governmental activities, public policymaking is a complex system. In other words, not all aspects of the endeavor can be controlled or predicted.²³⁴ Similarly, it would be naïve to assert that all factors which impact firearms policies can be discussed within the span of 100 pages. Countless unique characteristics help define and impact individual fire organizations. Variables such as community population size, geographical location, and command structure are just a few traits that work independently and collectively to shape fire departments in distinctive ways.

Agencies that create firearms policies must be mindful of the malleable nature of public opinion, community needs, and fiscal impacts of such programs. Therefore, the construction of policies should begin by prioritizing agility and flexibility. Policy architects must avoid monolithic firearms models as they will inevitably fail to meet one or more needs of the communities they serve. The variables that inform the decision to arm firefighters or disarm firefighters are ever-changing, and they need to be continually monitored. Ongoing data collection and analysis will remain invaluable tools for decision-makers.

F. FINDINGS

This research has resulted in four significant conclusions. The first is that when fire sector agencies opt to arm personnel, they should model their programs after school sector programs rather than law enforcement programs. Although law enforcement agencies have had a longer relationship with firearms, the school sector has enjoyed a safer one. Since safety will remain a paramount concern for stakeholders, fire sector policy construction should focus on adopting the best practices of armed school districts.

The second main conclusion of this research is that the U.S. federal government can enact national gun legislation within the fire sector. Despite some inherent constitutional limitations, federal stakeholders have already coordinated to develop a national firearms policy. A unification of public and political thoughts and actions followed the events of 9/11. This alliance, focused on combatting terrorism, resulted in an

234. Bernardo Mueller, “Why Public Policies Fail: Policymaking under Complexity,” *Economia* 21, no. 2, (May–August, 2020): 311–323, <https://doi.org/10.1016/j.econ.2019.11.002>.

unprecedented opportunity to enact LEOSA legislation. The question remains, can the politicians and public once again be persuaded that national gun violence threats merit a consolidation of effort to pass one federal firearms policy for fire sector first responders.

A third major finding of this thesis is that U.S. safety agencies have been remiss in their duty to set standards for guns in fire sector workplaces. U.S. safety agencies continue to weigh in on a nearly innumerable array of occupational hazards. Additionally, OSHA, NIOSH, USFA, and the NFPA's mission statements insist that their *raison d'être* is to secure fire service members' health and safety. At a minimum, one of these safety entities should regulate safe gun training, operational usage, maintenance, and storage practices for armed personnel. This research determined that the NFPA is uniquely suited to enacting gun safety standards and ensuring sector-wide compliance.

A final noteworthy conclusion of this thesis is that public tolerance of gun-carry programs is impacted by semantics and perception. The importance of context in gun-carry conversations cannot be overstated. The long-term success and sustainability of Sunnyvale's DPS model has prompted a surge of interest in the framework. Research conducted here notes that the overwhelming majority of objections to the DPS model revolve around various fiscal interests, logistical concerns, training obstacles, and frictions over police and fire unions' conflicting interests. Interestingly, minimal political or public outrage exists over placing firearms in the hands of DPS employees. When arming firefighters, organizations should consider that a change in agency title could facilitate acceptance of firearms carriage models. Historically, DPS administrations experience far less friction than fire departments do when adopting gun-carry policies.

Today, fire service members maintain an essential role in the homeland security enterprise. The protection of life and property from fire, prehospital emergency medical care, and hazmat detection and mitigation are just a few of the most common threats addressed by fire departments across the United States. Whether the U.S. public needs or even wants fire service members to expand their homeland security mission by taking up firearms remains undecided.

This research confirms that arming firefighters is a byzantine problem. The establishment of gun-carry-programs offers additional security for citizens and for the firefighters tasked with safeguarding them; but at what cost? Due to the complexity of this debate, the search for one ideal gun-carry model continues.

In closing, it is vital for those who oppose fire sector gun carriage to acknowledge that many fire agencies have already adopted firearms. It remains likely that more fire departments will follow suit. In the future, constructive conversations should revolve around how to employ the safest and most effective weapons tactics rather than continuing to debate whether weapons are needed. As the saying goes, in many fire jurisdictions, the genie is already out of the bottle. Despite philosophical or ethical objections to weapons, opponents of these programs should still contribute to the conversations that precede and follow their creation. All citizens should participate in such polarizing debates as they are reflections of our nation's democratic ethos. Through public discourse, we can continue to address the myriad, ever-evolving homeland security threats.

G. RECOMMENDATIONS FOR FUTURE RESEARCH

The practice of carrying firearms is a relatively new undertaking for many fire sector agencies. Therefore, data related to firearm safety, usage, and efficacy is currently either limited or non-existent. Future research in this area should include emerging data related to firearms program planning, implementation, and maintenance within the fire sector. This comparative analysis of various fire organizations could be vastly improved through the addition of hard data.

Although the research would amount to a herculean undertaking, it would be invaluable to know precisely how many of the nearly 30,000 U.S. fire departments are using firearms carry models at any particular time. An inventory of those armed agencies would allow for the sharing of best practices across jurisdictions. Moreover, it would allow for more accurate data collection from those practicing agencies and simplify the comparative process.

This thesis briefly touched upon the somewhat vague costs of gun programs associated with accidental discharges and unauthorized uses of force. Municipalities are

typically required to pay out large sums of money for those occasional weapons mishaps. Decision-makers could benefit greatly from having more accurate payout numbers. Expensive litigation could lead to severe disruption of services or even rend in ruin for cash-strapped departments. Therefore, future research should approximate a “real dollar” risk estimate on gun-carry models.

Law Enforcement Officer Safety Act (LEOSA) legislation is a national gun policy that has been in play for more than 15 years. Future studies of fire sector gun models might include lessons learned from LEOSA legislation. A more in-depth examination of LEOSA’s benefits and shortcomings could provide important context for stakeholders. Since public safety and emergency response to violent incidents are relevant to both police and fire agencies, policymakers should consider whether or not LEOSA strategies could be transferable to firefighters. Presently, the longevity of LEOSA indicates that national gun policies in the fire service might be created and sustained.

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LIST OF REFERENCES

- Alanazy, Ahmed Ramdan M., Stuart Wark, John Fraser, and Amanda Nagle. "Factors Impacting Patient Outcomes Associated with Use of Emergency Medical Services Operating in Urban Versus Rural Areas: A Systematic Review." *International Journal of Environmental Research and Public Health* 16, no. 10 (January 2019): 1–16. <https://doi.org/10.3390/ijerph16101728>.
- American Psychological Association. "APA's Advocacy on Gun Violence Prevention." Accessed August 15, 2020. <https://www.apa.org/advocacy/gun-violence>.
- Apex Officer. "Police Training 101 Guide." Accessed August 10, 2020 <https://www.apexofficer.com/police-training>.
- Associated Press. "Florida Officer Was Killed with His Own Gun." *The Florida Times-Union*, July 31, 2018. <https://www.jacksonville.com/news/20180731/florida-officer-was-killed-with-his-own-gun>.
- . "Teachers in Texas District Get Approval to Carry Guns." *Daily News*, August 16, 2008. <https://www.dailynews.com/20080816/teachers-in-texas-district-get-approval-to-carry-guns>.
- Associated Press and Steve Contorno. "Here Is Every New Gun Law in the U.S. since the Parkland Shooting." *Tampa Bay Times*, February 13, 2019. <https://www.tampabay.com/florida-politics/buzz/2019/02/13/here-is-every-new-gun-law-in-the-us-since-the-parkland-shooting/>.
- Ayres, Loren D. "Integration of Police and Fire Services." *Journal of Criminal Law, Criminology, and Police Science* 47, no. 4 (November 1956): 490. <https://doi.org/10.2307/1140440>.
- Banks, Duren, Joshua Hendrix, Matthew Hickman, and Tracey Kyckelhahn. *National Sources of Law Enforcement Employment Data*. NCJ 249681. Washington, DC: Bureau of Justice Studies, April 2016. <https://www.bjs.gov/content/pub/pdf/nslead.pdf>.
- Bardach, Eugene, and Eric M. Patashnik. *A Practical Guide for Policy Analysis: The Eightfold Path to More Effective Problem Solving*. 6th ed. Thousand Oaks, CA: CQ Press, 2019.
- Batsche, Hannah. "School Safety: The Industry Shootings Has Created and What We Can Do to Protect Our Children Featured Practice Perspectives: Education Connection." *Children's Legal Rights Journal* 39, no. 2 (2019): 208–12.

- Bennett, Daniel S. "Police Response Times to Calls for Service: Fragmentation, Community Characteristics, and Efficiency." Semantic Scholar. November 2018. <https://www.semanticscholar.org/paper/Police-Response-Times-to-Calls-for-Service-%3A-%2C-%2C-Bennett/a2155b563ee2f45a527b26d3e0fa5557c0b741d9>.
- Berg, Alexandra. "Sunnyvale: Making Police and Fire Services Interchangeable." *California Forward*. April 22, 2020. <https://cafwd.org/reporting/entry-new/sunnyvale-making-police-and-fire-services-interchangeable>.
- Blake, David, and Edward Cumella. "Factoring Fatigue into Police Deadly Force Encounters: Decision-Making and Reaction Times." *Law Enforcement Executive Forum* (March 15, 2015). <https://doi.org/10.19151/LEEF.2015.1501d>.
- Bonin, Tyler. "Teachers Are Not Soldiers: A Marine-Turned-Teacher Argues That It's Impossible to Prepare Educators to Effectively Use a Gun in a Crisis." *The Atlantic*, March 3, 2018. <https://www.theatlantic.com/education/archive/2018/03/teachers-are-not-soldiers/554783/>.
- Bookwalter, Genevieve. "Naperville Firefighters Forming Elite Response Team." *The Naperville Sun*, March 5, 2019. <https://www.chicagotribune.com/suburbs/naperville-sun/ct-nvs-naperville-fire-tactical-emergency-team-st-0306-20160305-story.html>.
- Brady United. "Key Statistics." Accessed July 25, 2020. <https://www.bradyunited.org/key-statistics>.
- Bulzomi, Michael. "Legal Digest: Off-Duty Officers and Firearms." *FBI: Law Enforcement Bulletin*, January 1, 2011. <https://leb.fbi.gov/articles/legal-digest/legal-digest-off-duty-officers-and-firearms>.
- Campbell, Richard, and Joseph Molis. "Firefighter Injuries Report in 2018." *NFPA Journal Magazine*, November 1, 2019. <http://www.nfpa.org/News-and-Research/Publications-and-media/NFPA-Journal/2019/November-December-2019/Features/FF-Injuries>.
- Centers for Disease Control and Prevention (CDC). "Fire Fighter Fatality Investigation and Prevention Program." Accessed November 22, 2019. <https://www.cdc.gov/niosh/fire/default.html>.
- . "NIOSH Strategic Plan Outline 2010–2015." Last modified June 6, 2014. <https://www.cdc.gov/niosh/docs/strategic/default.html>.
- Channick, Robert. "Morton Grove's Landmark Gun Prohibition Is Repealed." *Chicago Tribune*, July 29, 2008. <https://www.chicagotribune.com/news/ct-xpm-2008-07-29-0807280686-story.html>.

- Charles, Michael T., and Anne G. Copay. "Acquisition of Marksmanship and Gun Handling Skills through Basic Law Enforcement Training in an American Police Department." *International Journal of Police Science & Management* 5, no. 1 (March 1, 2003): 16–30. <https://doi.org/10.1350/ijps.5.1.16.11245>.
- Chermak, Steven, Charles Scheer, and Jeremy M. Wilson. "Police Consolidation in the News." *Police Quarterly* 17, no. 2 (2014): 150–175.
- Choi, Kenny. "Sunnyvale Chief Explains The City's Unique Duo Role Use Of Safety Officers." KPIX CBS, June 27, 2020. <https://sanfrancisco.cbslocal.com/2020/06/27/sunnyvale-chief-explains-the-citys-unique-duo-role-use-of-safety-officers/>.
- City of Coral Springs. "Special Ops—Special Response Team/Tactical S.R.T. Paramedic." Accessed October 10, 2020. <https://www.coralsprings.org/government/other-departments-and-services/fire/about-us/specialty-unit/special-ops-special-response-team-tactical-s-r-t-paramedic>.
- City of Sunnyvale. "Budget In Brief." Accessed July 21, 2020. <https://sunnyvale.ca.gov/civicax/filebank/blobdload.aspx?t=68955.23&BlobID=27352>.
- . "Recruitment and Careers." Accessed April 22, 2020. <https://sunnyvale.ca.gov/government/safety/recruitment/default.htm>.
- . "Sunnyvale Uniform Crime Report." Accessed April 22, 2020. <https://sunnyvale.ca.gov/civicax/filebank/blobdload.aspx?BlobID=22968>.
- City-Data. "Sunnyvale, California (CA 94086) Profile: Population, Maps, Real Estate, Averages, Homes, Statistics, Relocation, Travel, Jobs, Hospitals, Schools, Crime, Moving, Houses, News, Sex Offenders." Accessed April 23, 2020. <http://www.city-data.com/city/Sunnyvale-California.html>.
- CNN. "Mass Shootings in the U.S. Fast Facts." Accessed January, 17, 2021. <https://www.cnn.com/2019/08/19/us/mass-shootings-fast-facts/index.html>.
- Concealed Coalition. "What Is 'Shall Issue?'" Accessed August 22, 2020. <https://concealedcoalition.com/gun-laws/what-is-shall-issue/>.
- Congress.gov. "S.397 - Protection of Lawful Commerce in Arms Act." Accessed April 22, 2020. <https://www.congress.gov/bill/109th-congress/senate-bill/397/text>.
- . "Text - S.2070 - 101st Congress (1989-1990): Gun-Free School Zones Act of 1990." Accessed September 4, 2020. <https://www.congress.gov/bill/101st-congress/senate-bill/2070/text>.
- Cook, Philip J. "Gun Theft and Crime." *Journal of Urban Health* 95, no. 3 (2018): 305–12. <https://doi.org/10.1007/s11524-018-0253-7>.

- Coyne-Beasley, T., and R. M. Johnson. “Law Enforcement Officers’ Opinions about Gun Locks: Anchors on Life Jackets?” *Injury Prevention* 7, no. 3 (September 1, 2001): 200–204. <https://doi.org/10.1136/ip.7.3.200>.
- DeMitchell, Todd A, and Christine C. Rath. “Armed and Dangerous—Teachers? A Policy Response to Security in Our Public Schools,” *Brigham Young University Education and Law Journal*, no. 132 (2019): 62–93.
- Department of Citywide Administrative Services. “Promotion to Fire Marshal (Uniformed): Notice of Examination. Amended Notice April 9, 2014.” Accessed April 23, 2020. <https://www1.nyc.gov/assets/dcas/downloads/pdf/noes/201404502000.pdf>
- Donner, Christopher M., and Nicole Popovich. “Hitting (or Missing) the Mark: An Examination of Police Shooting Accuracy in Officer-Involved Shooting Incidents.” *Policing: An International Journal* 42, no. 3 (2019): 474–89. <https://doi.org/10.1108/PIJPSM-05-2018-0060>.
- Doucette, Mitchell, Cassandra Crifasi, and Shannon Frattaroli. “Right-to-Carry Laws and Firearm Workplace Homicides: A Longitudinal Analysis.” American Public Health Association (APHA). November 6, 2019. <https://ajph.aphapublications.org/doi/full/10.2105/AJPH.2019.305307>
- Downey, Maureen. “Cops Face Hard Time Hitting Targets in Gunfights. Can Teachers Do It?” *Atlanta Journal-Constitution*, February 22, 2018. <https://www.ajc.com/blog/get-schooled/gunfights-trained-officers-have-percent-hit-rate-yet-want-arm-teachers/mDBlhDtV6Na4wJVpeu58cM/>.
- Drexler, Ken. “Research Guides: Federalist Papers: Primary Documents in American History: Federalist Nos. 41–50.” Library of Congress Research Guides. Accessed July 21, 2020. <https://guides.loc.gov/federalist-papers/text-41-50>.
- Dwyer, Kayla. “Guns in School? Here’s a List of States That Allow Armed Teachers.” *The Morning Call*, February 14, 2019. <https://www.mcall.com/news/education/mc-nws-guns-in-schools-list-20181108-story.html>.
- Eng, Monica. “Why Send a Firetruck to Do an Ambulance’s Job?” National Public Radio. April 11, 2017. <https://www.npr.org/sections/health-shots/2017/04/11/523025987/why-send-a-firetruck-to-do-an-ambulances-job>.
- Everyone Goes Home. “16 Firefighter Life Safety Initiatives.” Accessed April 23, 2020. <https://www.everyonegoeshome.com/16-initiatives/12-violent-incident-response/>.
- Fahy, Rita, Jay Petrillo, and Joseph Molis. *Firefighter Fatalities in the United States*. Quincy, MA: National Fire Protection Association, July 2020. <https://www.nfpa.org/News-and-Research/Data-research-and-tools/Emergency-Responders/Firefighter-fatalities-in-the-United-States>.

- Farmer, Clare, and Richard Evans. "Primed and Ready: Does Arming Police Increase Safety? Preliminary Findings." *Violence and Gender* 7, no. 2 (July 23, 2019): 47–56. <https://doi.org/10.1089/vio.2019.0020>.
- Federal Bureau of Investigation. "FBI Releases 2019 Statistics on Law Enforcement Officers Killed in the Line of Duty." May 4, 2020. <https://www.fbi.gov/news/pressrel/press-releases/fbi-releases-2019-statistics-on-law-enforcement-officers-killed-in-the-line-of-duty>.
- Fink, Jenni. "Florida Bill Would Allow Paramedics to Carry Guns When Responding to Mass Shootings at Schools." *Newsweek*, March 26, 2019. <https://www.newsweek.com/florida-bill-would-allow-paramedics-carry-guns-when-responding-mass-shootings-1375429>.
- Firefighter Nation. "USFA: Texas On-Duty Death." June 16, 2020. <https://www.firefighternation.com/2020/06/16/usfa-texas-on-duty-death-8/>.
- Freeborn, Varg. "The Difference Between 'Qualification' and 'Training.'" Buckeye Firearms Association, March 6, 2015. <https://www.buckeyefirearms.org/difference-between-qualification-and-training>.
- French, Laura. "President's Budget Recommends Less Funding for AFG/SAFER, More for USFA." *Fire Rescue1*, February 11, 2020. <https://www.firerescue1.com/legislation-funding/articles/presidents-budget-recommends-less-funding-for-afgsafer-more-for-usfa-kleWWSEFbYtNdXZ/>.
- Friese, Greg. "Paramedics Want Guns on Duty. What Comes Next?" *EMS1*, February 24, 2020. <https://www.ems1.com/safety/articles/paramedics-want-guns-on-duty-what-comes-next-N5TENDqTbD9fsx5p/>.
- Frumentarius. "Armed Firefighters and EMTs Are a Bad Idea." *SOFREP*, April 3, 2017. <https://sofrep.com/news/armed-firefighters-and-emts-are-a-bad-idea/>.
- Giffords Courage to Fight Gun Violence. "Statement: Gabrielle Giffords Responds to 3 Workplace Shootings in 24 Hours." September 20, 2018. <https://giffords.org/press-release/2018/09/workplace-shootings/>.
- Giffords Law Center. "Annual Gun Law Scorecard." Accessed October 12, 2020. <https://lawcenter.giffords.org/scorecard>.
- . "Concealed Carry." Accessed October 5, 2020 <https://giffords.org/lawcenter/gun-laws/policy-areas/guns-in-public/concealed-carry/>.
- . "Federal Powers to Regulate Guns." Accessed October 12, 2020. <https://lawcenter.giffords.org/gun-laws/federal-law/other-laws/federal-powers/>.

- . “Guns in Schools: State by State.” Accessed October 5, 2020. <https://lawcenter.giffords.org/gun-laws/state-law/50-state-summaries/guns-in-schools-state-by-state/>.
- . “Key Federal Acts Regulating Firearms.” Accessed October 22, 2020. <https://lawcenter.giffords.org/gun-laws/federal-law/other-laws/key-federal-acts-regulating-firearms/>.
- . “Preemption of Local Laws.” Accessed October 12, 2020. <https://lawcenter.giffords.org/gun-laws/policy-areas/other-laws-policies/preemption-of-local-laws/>.
- . “Safe Storage.” Accessed September 30, 2020. <https://lawcenter.giffords.org/gun-laws/policy-areas/child-consumer-safety/safe-storage/>.
- Gius, Mark. “Using the Synthetic Control Method to Determine the Effects of Concealed Carry Laws on State-Level Murder Rates.” *International Review of Law and Economics* 57 (March 1, 2019): 1–11. <https://doi.org/10.1016/j.irl.2018.10.005>.
- Gold, Michael. “Teachers Barred From Carrying Guns in New York Schools.” *New York Times*, July 31, 2019. <https://www.nytimes.com/2019/07/31/nyregion/guns-schools-ban-teachers-ny.html>.
- Gordon, Graham. “Traveling with a Concealed Firearm?” *Lexipol* (blog), June 30, 2020. <https://www.lexipol.com/resources/todays-tips/state-gun-laws-leosa-across-state-lines/>.
- Government Technology. “Hearing to Reauthorize U.S. Fire Administration (USFA),” October 3, 2007. <https://www.govtech.com/e-government/Hearing-to-Reauthorize-US-Fire-Administration.html>.
- Gun Violence Archive (GVA). “Charts and Maps.” Accessed November 1, 2019. <https://www.gunviolencearchive.org/>.
- Guns To Carry. “Gun Laws By State: The Complete and Updated Guide.” Accessed September 22, 2020. <https://www.gunstocarry.com/gun-laws-state/>.
- Halpin, Matt. “What Is The Average Police Response Time in the US?” *A Secure Life*, January 29, 2019. <https://www.asecurelife.com/average-police-response-time/>.
- Harris, Kevin R., David W. Eccles, Carlos Freeman, and Paul Ward. “‘Gun! Gun! Gun!’: An Exploration of Law Enforcement Officers’ Decision-Making and Coping under Stress during Actual Events.” *Ergonomics* 60, no. 8 (2017): 1112–22. <https://doi.org/10.1080/00140139.2016.1260165>.

- Hart, Greg. "What Is NFPA 3000 and Why Is It Important to Me?" RCM&D, January 30, 2020. <https://www.rcmd.com/resources/blog/what-nfpa-3000-and-why-it-important-me>.
- Hemenway, David, Deborah Azrael, and Matthew Miller. "Whose Guns Are Stolen? The Epidemiology of Gun Theft Victims." *Injury Epidemiology* 4, no. 1 (2017): 11. <https://doi.org/10.1186/s40621-017-0109-8>.
- Hilal, Susan. "A Package Deal: Police, Fire, and EMS All in One." *Police Chief Magazine*, September 2014. <https://www.policechiefmagazine.org/a-package-deal-police-fire-and-ems/>.
- Hupp, Brian. "Just Say No to Guns for EMS." EMS World, February 18, 2019. <https://www.emsworld.com/commentary/1222146/just-say-no-guns-ems>.
- International Association of Chiefs of Police. "Firearms Policy Position Statement." Accessed August 15, 2020. [https://www.theiacp.org/sites/default/files/2019-05/IACP%20Firearms%20Position%20Paper_2018%20\(1\).pdf](https://www.theiacp.org/sites/default/files/2019-05/IACP%20Firearms%20Position%20Paper_2018%20(1).pdf).
- Kates, Graham. "Some U.S. Police Train for Just a Few Weeks, in Some Countries They Train for Years." WBTV, June 13, 2020. <https://www.wbtv.com/2020/06/13/some-us-police-train-just-few-weeks-some-countries-they-train-years/>.
- Kellerman, Arthur, Frederick P. Rivara, Norman B. Rushforth, Joyce G. Banton, Donald T. Reay, Jerry T. Francisco, Ana B. Locci, Janice Prodzinski, Bela B. Hackman, and Grant Somes. "Gun Ownership as a Risk Factor for Homicide in the Home." *The New England Journal of Medicine*, 329 (October 1993):1084-1091. <https://www.nejm.org/doi/full/10.1056/NEJM199310073291506>.
- Kindy, Kimberly, Mark Fisher, Julie Tate, and Jennifer Jenkins. "Police Shootings." *Washington Post*, December 26, 2015. <https://www.washingtonpost.com/policeshootings/>.
- Kocieniewski, David, and Gary Gately. "Man Shoots 11, Killing 5 Girls, in Amish School." *New York Times*, October 3, 2006. <https://www.nytimes.com/2006/10/03/us/03amish.html>.
- Kraft, Michael E., and Scott R. Furlong. *Public Policy: Politics, Analysis, and Alternatives*. 7th ed. Thousand Oaks, CA: CQ Press, 2019.
- Lexipol. "Author: Lori Moore-Merrell." Accessed August 30, 2020. <https://www.lexipol.com/author/lori-moore-merrell-drph-mph/>.
- Loten, Angus. "911 Response Times Are Getting Faster Thanks to Data Integration." *Wall Street Journal*, June 13, 2019. <https://www.wsj.com/articles/911-response-times-are-getting-faster-thanks-to-data-integration-11560468747>.

- Lott, John R. "Schools That Allow Teachers to Carry Guns Are Extremely Safe: Data on the Rate of Shootings and Accidents in Schools That Allow Teachers to Carry," April 25, 2019. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3377801.
- Loveland Fire Rescue Authority (LFRA). "Fire Rescue Services." Accessed October 20, 2020. <https://lfra.org/our-services/fire-suppression-operations/fire-suppression-services/>.
- . "Fire Rescue Services." Accessed October 20, 2020 <https://lfra.org/our-services/fire-suppression-operations/fire-suppression-services/>.
- . "History." Accessed August 20, 2020. <https://lfra.org/about-us/history/>.
- Lucas, Fred. "How This Ohio Program Trains Teachers in 12 States to Carry Guns." *Daily Signal*, March 6, 2018. <https://www.dailysignal.com/2018/03/06/how-this-ohio-program-trains-teachers-to-carry-guns/>.
- Lyon, Jason. "Convergence, Guns, and the Public Safety Response." Master's thesis Naval Postgraduate School, 2019. <https://calhoun.nps.edu/handle/10945/63478>.
- Male, Brandon M. "Stress Response and Performance Changes of Law Enforcement Officers' Marksmanship under Varied Levels of Stress." PhD diss., Northern Illinois University, 2019. ProQuest.
- Mascia, Jennifer. "In Much of the Country, Cities Can't Enact Their Own Gun Laws." *The Trace*, December 8, 2018. <https://www.thetrace.org/2018/12/preemption-nra-local-gun-laws/>.
- Mata, Vinicio R. "The Contribution of Police and Fire Consolidation to the Homeland Security Mission." Master's thesis, Naval Postgraduate School, 2010. <http://hdl.handle.net/10945/5400>.
- McCarthy, Niall. "The Number of U.S. Police Officers Killed in the Line of Duty Increased Last Year [Infographic]." *Forbes*, May 8, 2019. <https://www.forbes.com/sites/niallmccarthy/2019/05/08/the-number-of-u-s-police-officers-killed-in-the-line-of-duty-increased-last-year-infographic/#51a4434f1189>.
- McGregor, Mark. "Bethel Firefighters Carrying Weapons: Clark County Department Could Be First in Ohio to Allow Concealed Carry on Runs." *Dayton Daily News*, April 14, 2013. <https://www.daytondailynews.com/news/bethel-firefighters-carrying-weapons/mYQnWYI4q3cEPwtaS8kJiK/>.
- McLeod, Marsha, and Brian Freskos. "Law Enforcement's Lost and Stolen Gun Problem." *The Trace*. November 26, 2018. <https://www.thetrace.org/2018/11/lost-and-stolen-police-guns/>.

- Meade, Brett. “Recruiting, Selecting, and Retaining Law Enforcement Officers.” National Police Foundation. March 17, 2016. <https://www.policefoundation.org/recruiting-selecting-and-retaining-law-officers/>.
- Mihalek, Donald J.. “Police Sidearms: The Handguns of America’s 10 Largest Departments.” *Tactical Life Gun Magazine: Gun News and Gun Reviews*. May 18, 2018. <https://www.tactical-life.com/firearms/handguns/largest-departments-police-sidearms/>.
- Mock, Brent. “How Cities Offload the Cost of Police Brutality.” Bloomberg, June 4, 2020. <https://www.bloomberg.com/news/articles/2020-06-04/the-financial-toll-of-police-brutality-to-cities>.
- Morin, Rich, and Andrew Mercer. “Police Officers Who Have Fired a Gun on Duty: A Closer Look.” Pew Research Center, February 8, 2017. <https://www.pewresearch.org/fact-tank/2017/02/08/a-closer-look-at-police-officers-who-have-fired-their-weapon-on-duty/>.
- Morley, Brandon, and Jeffrey Hadley. “Perspective: Public Safety Consolidation—Does It Make Sense?” FBI: Law Enforcement Bulletin, April 9, 2013. <https://leb.fbi.gov/articles/perspective/perspective-public-safety-consolidation-does-it-make-sense>.
- Morrison, Gregory B., and Bryan J. Vila. “Police Handgun Qualification: Practical Measure or Aimless Activity?” *Policing: An International Journal of Police Strategies & Management* 21, no. 3 (January 1, 1998): 510–33. <https://doi.org/10.1108/13639519810228804>.
- Morse, Rob. “Guns and Bandages—The Changing Face of First Responders.” Buckeye Firearms Association, August 28, 2018. <https://www.buckeyefirearms.org/guns-and-bandages-changing-face-first-responders>.
- MSUToday*. “Police-Fire Mergers Fuel MSU Research Program.” March 21, 2013. <https://msutoday.msu.edu/news/2013/police-fire-mergers-fuel-msu-research-program/>.
- Mueller, Bernardo. “Why Public Policies Fail: Policymaking under Complexity.” *Economia* 21, no. 2, (May– August, 2020): 311–323. <https://doi.org/10.1016/j.econ.2019.11.002>
- Munnik, Annabelle, Katharina Näswall, Graeme Woodward, and William S. Helton. “The Quick and the Dead: A Paradigm for Studying Friendly Fire.” *Applied Ergonomics* 84, no. 103032 (April 2020): 1–7. <https://doi.org/10.1016/j.apergo.2019.103032>.

- Murphy, John K. "Firefighters Carrying Guns on the Job." HGExperts. Accessed February 20, 2020. <https://www.hgexperts.com/expert-witness-articles/firefighters-carrying-guns-on-the-job-29792>.
- National Fire Prevention Association (NFPA). "About." Accessed June 13, 2020. <https://www.nfpa.org/About-NFPA>.
- . "Firefighter Injuries in the United States." Accessed November 1, 2019. <https://www.nfpa.org/News-and-Research/Data-research-and-tools/Emergency-Responders/Firefighter-injuries-in-the-United-States>.
- . "NFPA 1710." Accessed November 1, 2019. <https://www.nfpa.org/Codes-and-Standards/ARCHIVED/Safer-Act-Grant/NFPA-1710>.
- . "NFPA 3000, Standard for an Active Shooter/Hostile Event Response (ASHER) Program." Accessed June 13, 2020. https://catalog.nfpa.org/NFPA-3000-PS-Standard-for-an-Active-ShooterHostile-Event-Response-ASHER-Program-P18697.aspx?order_src=D840&gclid=CjwKCAjw0_T4BRBIEiwAwoEiAV2WJEYWQks2DtFNiAybAKxAUQACJjS2z6WxZO0YOoQt8gH9iOww0RoC7ikQAvD_BwE.
- . "NFPA Overview." Accessed June 1, 2020. <https://www.nfpa.org/overview>.
- . "NFPA Statistics—Fire Department Calls." Accessed June 5, 2020. <https://www.nfpa.org/News-and-Research/Data-research-and-tools/Emergency-Responders/Fire-department-calls>.
- . "U.S. Fire Department Profile." Accessed June 13, 2020. <https://www.nfpa.org/News-and-Research/Data-research-and-tools/Emergency-Responders/US-fire-department-profile>.
- National Law Enforcement Officers Memorial Fund. "Important Dates in Law Enforcement History." Accessed March 31, 2019. <https://nleomf.org/facts-figures/important-dates-in-law-enforcement-history>.
- Neighborhood Scout. "Sunnyvale, CA Crime Rates and Statistics." Accessed May 18, 2020. <https://www.neighborhoodscout.com/ca/sunnyvale/crime>.
- New York City Fire Department. "Fire Commissioner Nigro Announces 'Leave Behind' Naloxone Program." August 31, 2018. <http://www1.nyc.gov/site/fdny/news/fa7218/fire-commissioner-nigro-leave-behind-naloxone-program>.
- NRA Explore. "NRA Gun Safety Rules." Accessed July 25, 2020. <https://gunsafetyrules.nra.org/>.

- NRA-ILA “Illinois: Senate Attempts to Repeal Preemption Law.” Accessed July 24, 2020. <https://www.nraila.org/articles/20180314/illinois-senate-attempts-to-repeal-preemption-law>.
- . “Law Enforcement Officers Safety Act (LEOSA).” Accessed July 17, 2020. <https://www.nraila.org/gun-laws/leosa/>.
- Occupational Safety and Health Administration (OSHA). “OSH Act of 1970.” December 29, 1970. <https://www.osha.gov/laws-regs/oshact/completeoshact>.
- . “OSHA Revises Publication to Protect the Safety of Firefighters.” September 17, 2015. <https://www.osha.gov/news/newsreleases/trade/09172015>.
- Patel, Jugal K. “After Sandy Hook, More Than 400 People Have Been Shot in Over 200 School Shootings.” *New York Times*, February 15, 2018. <https://www.nytimes.com/interactive/2018/02/15/us/school-shootings-sandy-hook-parkland.html>, <https://www.nytimes.com/interactive/2018/02/15/us/school-shootings-sandy-hook-parkland.html>.
- Police One Staff. “5 Things to Know about the LEOSA Reform Act.” Police1. March 22, 2019. <https://www.police1.com/gun-legislation-law-enforcement/articles/5-things-to-know-about-the-leosa-reform-act-qiLVfTfPssN24Od/>.
- RAND. “Gun Policy in America: An Overview.” Last modified April 22, 2020. <https://www.rand.org/research/gun-policy/key-findings/gun-policy-in-america.html>.
- Rhyssdal, Kai, and Bennett Purser. “How One City Provides Public Safety without a Police Department.” Marketplace. June 10, 2020. <https://www.marketplace.org/2020/06/10/how-one-city-provides-public-safety-without-a-police-department/>.
- Rifkin, Rich. “Is It Always Sunnier in Sunnyvale?” *Davis Enterprise*, January 15, 2013. <https://www.davisenterprise.com/forum/opinion-columns/is-it-always-sunnier-in-sunnyvale/>.
- Rogers, Melanie, Ericka A. Lara Ovares, Olushola Olaitan Ogunleye, Tara Twyman, Cem Akkus, Kalpita Patel, and Marwa Fadlalla. “Is Arming Teachers Our Nation’s Best Response to Gun Violence? The Perspective of Public Health Students.” *American Journal of Public Health* 108, no. 7 (June 6, 2018): 862–63. <https://doi.org/10.2105/AJPH.2018.304477>.
- Romney, Lee. “Cross-Training of Public Safety Workers Attracting More Interest.” *Los Angeles Times*, January 1, 2013. <https://www.latimes.com/archives/la-xpm-2013-jan-01-la-me-sunnyvale-20130101-story.html>.

- Rosenberg, Yuval. “How Much Would It Cost to Arm Teachers as Trump Proposed?” *Fiscal Times*, February 22, 2018. <http://www.thefiscaltimes.com/2018/02/22/How-Much-Would-It-Cost-Arm-Teachers-Trump-Proposed>.
- Rostron, Allen. “The Dickey Amendment on Federal Funding for Research on Gun Violence: A Legal Dissection.” *American Journal of Public Health* 108, no. 7 (July 2018): 865–67. <https://doi.org/10.2105/AJPH.2018.304450>.
- Rubinstein, Dana, and Jeffery C. Mays. “Nearly \$1 Billion Is Shifted From Police in Budget That Pleases No One.” *New York Times*, June 30, 2020. <https://www.nytimes.com/2020/06/30/nyregion/nypd-budget.html>.
- Russonello, Giovanni. “Have Americans Warmed to Calls to ‘Defund the Police’?” *New York Times*, July 3, 2020. <https://www.nytimes.com/2020/07/03/us/politics/polling-defund-the-police.html>.
- Scott, Dylan. “Police Sidearms: From Past to Present.” *Pew Tactical* (blog), February 11, 2017. <https://www.pewpewtactical.com/police-sidearms-past-present/>.
- Shaw, Kamika S. “Regulating Guns in the Workplace.” *OnLabor* (blog), March 29, 2017. <https://www.onlabor.org/regulating-guns-in-the-workplace/>.
- Shoemaker, J. Dale. “Pittsburgh City Council Passes Landmark Gun Legislation. NRA Prematurely Said It Filed Suit.” PublicSource. April 2, 2019. <https://www.publicsource.org/pittsburgh-city-council-passes-landmark-gun-legislation-nra-promptly-files-suit/>.
- Smith Broady, Arlinda. “Locked & Loaded: Inside a Georgia School District with Armed Teachers.” *Atlanta Journal-Constitution*, March 28, 2019. <https://www.ajc.com/news/locked-loaded-inside-georgia-school-district-with-armed-teachers/Gz9OTHY03cNDfuSgrDJqiM/>.
- Smith Richards, Jennifer, Angela Caputo, Todd Lighty, and Jason Meisner. “92 Deaths, 2,623 Bullets: Tracking Every Chicago Police Shooting over 6 Years.” *Chicago Tribune*, August 26, 2016. <https://www.chicagotribune.com/investigations/ct-chicago-police-shooting-database-met-20160826-story.html>.
- Sorrells, Eddie. “Weapons in the Workplace.” *Security Management*. March 1, 2018. <http://www.asisonline.org/security-management-magazine/articles/2018/03/weapons-in-the-workplace/>.
- Southall, Ashley, and Neil MacFarquhar. “Gun Violence Spikes in N.Y.C., Intensifying Debate Over Policing.” *New York Times*, June 23, 2020. <https://www.nytimes.com/2020/06/23/nyregion/nyc-shootings-surge.html>.

- Sparkman, David. "Can You Keep Guns Out of Your Workplace?" EHS Today, January 7, 2019. <https://www.ehstoday.com/environment/article/21919948/can-you-keep-guns-out-of-your-workplace>.
- Stelloh, Tim. "Massachusetts Police Officer Was Shot 10 Times with His Own Gun." NBC News, July 31, 2018. <https://www.nbcnews.com/news/us-news/massachusetts-police-officer-was-shot-10-times-his-own-gun-n891846>.
- Taylor, Jennifer A., and Regan Murray. *Mitigation of Occupational Violence to Firefighters and EMS Responders*. Emmitsburg, MD: U.S. Fire Administration, 2017. https://www.usfa.fema.gov/downloads/pdf/publications/mitigation_of_occupation.
- Towne, Erika. "Sunnyvale's Department of Public Safety Is One of the Largest Fully-Integrated Departments in the U.S." *The Silicon Valley Voice* (blog), April 11, 2019. <https://www.svvoice.com/sunnyvales-department-of-public-safety-is-one-of-the-largest-combined-departments-in-the-u-s/>.
- U.S. Census Bureau (UCB). "What Is Rural America?" December 2016. <https://www.census.gov/library/stories/2017/08/rural-america.html>.
- U.S. Concealed Carry Association (USCCA). "Concealed Carry Reciprocity Map." Accessed September 2, 2020. https://www.usconcealedcarry.com/resources/ccw_reciprocity_map/co-gun-laws/.
- U.S. Department of Labor (USDOL). "Commonly Used Statistics: Federal OSHA Coverage." Accessed September 2, 2020. <https://www.osha.gov/data/commonstats>.
- . "National Census of Fatal Occupational Injuries in 2018," Accessed September 2, 2020. https://www.bls.gov/news.release/archives/foi_12172019.pdf.
- . "Workplace Violence." Accessed September 2, 2020. <https://www.osha.gov/workplace-violence>.
- U.S. Fire Administration. "About the U.S. Fire Administration." Accessed September 30, 2020. <https://www.usfa.fema.gov/about/index.html>.
- . "Current Events/Issues Affecting the Fire and Emergency Services." October 8, 2019. https://www.usfa.fema.gov/current_events/index.html.
- . "National Fire Incident Reporting System," July 22, 2020. <https://www.usfa.fema.gov/data/nfirs/index.html>.
- . "U.S. Fire Statistics." U.S. Fire Administration. Accessed April 16, 2020. <https://www.usfa.fema.gov/data/statistics/index.html>.

- Vargas, Cynthia M. "Tactical Firefighter Teams: Pivoting Toward the Fire Service's Evolving Homeland Security Mission." Master's thesis, Naval Postgraduate School, 2016. <http://hdl.handle.net/10945/50500>.
- Vera, Amir. "New Law Lets Paramedics in Florida Be Armed in 'High-Risk Incidents.'" CNN, June 10, 2019. <https://www.cnn.com/2019/06/10/us/florida-armed-ems/index.html>.
- Vozzella, Laura. "Virginia Senate Passes Bill Allowing Firefighters and EMTs to Carry Weapons." *Washington Post*, January 22, 2019. https://www.washingtonpost.com/local/virginia-politics/virginia-senate-passes-bill-allowing-firefighters-and-emts-to-carry-weapons/2019/01/22/56ed8012-1e8e-11e9-9145-3f74070bbdb9_story.html.
- Wallace, Nick. "The 9 Safest Cities in America." CBS News, November 20, 2015. <https://www.cbsnews.com/media/the-9-safest-cities-in-america/>.
- Ward, Greg. "Beyond the Traditional Fire-Rescue Mission: Loveland's TAC Fire." FireRescue1. August 22, 2020. <https://www.firerescue1.com/mass-violence-enhanced-training-emerging-threats/articles/beyond-the-traditional-fire-rescue-mission-lovelands-tac-fire-h0Rkl8nKGKz6WdgY/>.
- Watkins, Ali, and Ashley Southall. "N.Y.P.D. Officer Was Killed by 'Friendly Fire' during a Struggle with Suspect." *New York Times*, September 30, 2019. <https://www.nytimes.com/2019/09/30/nyregion/bronx-officer-brian-mulkeen-nypd.html>.
- Weatherby, Danielle. "Opening the Snake Pit: Arming Teachers in the War against School Violence and the Government-Created Risk Doctrine." *Connecticut Law Review* 48, no. 1 (2015): 119–76.
- Weisner, Lauren, Otto, H. Douglas and Adams, Sharyn. "Issues in Policing Rural Areas: A Review of the Literature." ICJIA Research Hub. March 18, 2020. <https://icjia.illinois.gov/researchhub/articles/issues-in-policing-rural-areas-a-review-of-the-literature>.
- Wexler, Laura. "Gun Shy: How the Dickey Amendment Affects Gun Violence in America." *Hopkins Bloomberg Public Health Magazine*, Fall 2017. <https://magazine.jhsph.edu/2017/fall/features/cassandra-crifasi-hopkins-moderate-gun-owner-gun-policy-researcher/how-the-dickey-amendment-affects-gun-violence-research.html>.
- Wilson, Jeremy M., and Clifford A. Grammich. "Deconsolidation of Public-Safety Agencies Providing Police and Fire Services." *International Criminal Justice Review* 25, no. 4 (December 1, 2015): 361–78. <https://doi.org/10.1177/1057567715618590>.

Wood, Mike. "Why Firearms Standardization Puts Police Officers at Risk," Police1. October 16, 2017. <https://www.policeone.com/police-products/firearms/training/articles/why-firearms-standardization-puts-police-officers-at-risk-7VIpYZBAhC62fvtv/>.

World Population Review. "Castle Doctrine States 2020." Accessed July 18, 2020. <https://worldpopulationreview.com/state-rankings/castle-doctrine-states>.

———. "Concealed Carry States 2020." Accessed July 18, 2020. <https://worldpopulationreview.com/state-rankings/concealed-carry-states>.

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