Active shooter/mass casualty incident response plan for Williamson Fire & Rescue

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CERTIFICATION STATEMENT

I hereby certify that this paper constitutes my own product, that where the language of others is set forth, quotation marks do indicate, and that appropriate credit is given where I have used the language, ideas, expressions, or writings of another.

Signed: Brian Jones

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Abstract

Williamson Fire & Rescue relies on volunteers to provide a variety of emergency services to the communities which it protects. With an expanding service area, fire department has been challenged to meet the changing needs of a rapidly growing community. While the odds of an active shooter/mass casualty incident occurring in the service area are small, the fire department will be called upon to respond and must be operationally prepared. The problem is that Williamson Fire & Rescue does not have a plan for responding to an active shooter or mass casualty incident within its service area. The purpose of this research project is to develop a plan for Williamson Fire & Rescue's response to active shooter and mass casualty events. Action research was conducted toward the goal of creating a standard operating guideline that may be followed in the event of such an incident. The following questions were answered to develop the department guideline: a) What locations within the Williamson Fire & Rescue service area should be considered target hazards for active shooter incidents when developing response plans? b) What response expectations to an active shooter/mass casualty incident does law enforcement and EMS have for Williamson Fire & Rescue? c) Is there specialized equipment or training for an active shooter/mass casualty incident response that should be acquired or delivered? d) what response guidelines for an active shooter/mass casualty incident should be adopted by Williamson Fire & Rescue? The standard operating guideline developed reflects industry standards and the recommended best practices revealed by the research. The standard operating guideline incorporated the actions of Williamson Fire & Rescue within a response framework that included law enforcement and EMS. The guideline also described specific equipment and training necessary that should be acquired by the fire department.

Table of Contents

Active shooter/mass casualty incident response plan for Williamson Fire & Rescue

Williamson Fire & Rescue reflects the community which it serves because it is also in a state of transition. Historically, the area was inhabited by small-scale farms. The population remained low proportional to the land area. Those who did not farm the land commuted to the metropolitan Nashville area for work. The last twenty-seven years has seen the population of Williamson County triple from 81,000 in 1990 to 226,000 in 2017(U.S. Census Bureau, 2018). As land values increase, many large farms have been developed into subdivisions and small farms have been repurposed into large-lot single family homes to meet demand for housing.

The unincorporated portions of Williamson County receive fire protection from volunteer fire departments. Historically, these volunteer departments met minimal expectations with the most basic levels of service. As the county has grown, call volume has increased proportionally. More importantly, the expectations for service have changed as newly arrived residents rely on their past community experiences to frame their expectations for service. Williamson Fire & Rescue was originally founded in 1999 as the Peytonsville Volunteer Fire Department to serve an area of the county beyond five road miles of the nearest other volunteer fire stations. After a period of time, the fire department's culture stagnated and it became unable to make consistent or adequate responses to calls for service. A review of the department by Insurance Services Office (ISO) in 2013 found it failing to meet the organizations minimum standards for a fire department. ISO graded the Peytonsville department as a Class 10 but offered Williamson County an opportunity to reorganize the department and be reviewed again after remediation steps were accomplished. Williamson Fire & Rescue was built into a fire department that was attuned to community expectations of emergency services delivery and respectful of tradition while focused on progressive growth and improvement.

In February of 2018, Williamson Fire & Rescue was asked by Williamson County to assume responsibility for three neighboring fire districts that had previously been administered by two separate volunteer fire departments. Both of those fire departments had been reviewed by ISO the previous fall and graded as Class 10 fire departments. Given the organizational success of Williamson Fire & Rescue and its geographic proximity to the failing departments, a consolidation of the four fire districts offered the best chance of preserving a volunteer fire service while meeting the needs and expectations of a changing community. The consolidation of the four fire districts under one volunteer fire department was recognized by the Williamson County Commission on July 9, 2018.

The Executive Fire Officer program's year two course, Executive Analysis of Community Risk Reduction, encouraged students to identify areas of risk within the community and develop strategies to minimize and/or mitigate those risks. The area served by Williamson Fire & Rescue contains no industry, little commercial enterprises and mostly single-family residential structures. The area is prized by both new and long-term residents as a place to live and raise families. A continual influx of new residents has strained governmental services such as schools and public safety as they struggle to meet demands of capacity and quality. During the process of identifying community risks, the potential for an active shooter/mass casualty incident at a location such as a school, church or other public assembly area was noted. The consolidated fire districts for which Williamson Fire & Rescue is responsible for delivering emergency services included four large public schools, an outdoor concert venue, several public parks and numerous houses of worship. The escalating trend of active shooter/mass casualty events across the United States should require fire departments to consider the possibility of such

an event occurring within their jurisdictions and evaluating their ability to respond. A mass casualty event would catastrophically damage the social fabric of the community.

The problem which this applied research project addressed was that Williamson Fire & Rescue does not have equipment, training or plans for mitigating the risks associated with an active shooter/mass casualty incident within the community it serves. The purpose of this applied research project was to develop a plan to direct the actions of Williamson Fire & Rescue in the event of an active shooter/mass casualty incident. Action research was used for this project so that a written plan in the form of a standard operating guideline would be produced. The plan should be practical for this department to implement and have a realistic chance of achieving the mitigation goals while reflecting the best practices and standards being developed by our nation's public safety community to address this expanding cultural phenomenon. Recognizing the limited resources of a small volunteer fire department such as Williamson Fire & Rescue, the research compared and contrasted the obstacles to effective mitigation of small fire departments versus municipal departments in urban areas and sought viable solutions.

Four research questions were posed to given direction to the project: a) What locations within the Williamson Fire & Rescue service area should be considered target hazards for active shooter incidents when developing response plans? b) What response expectations to an active shooter/mass casualty incident does law enforcement and EMS have for Williamson Fire & Rescue? c) Is there specialized equipment or training for an active shooter/mass casualty incident response that should be acquired or delivered? d) what response guidelines for an active shooter/mass casualty incident should be adopted by Williamson Fire & Rescue?

Background and Significance

A compilation of potential hazards within the community served by Williamson Fire & Rescue was conducted as part of the coursework for Executive Analysis of Community Risk Reduction (EACRR). The land use for the area was almost entirely residential with an increasing population density. The area does not have industry and little commercial enterprises. Four public schools are located within the service area. These two elementary schools, a middle school and a high school have a total student population of over 3,650 (Williamson County Schools, 2018). The U.S. Census Bureau statistics on the Williamson Fire & Rescue service area that were compiled during the EACRR pre-course work defined the total population as 8,710 (USA.com website, 2014). The student populations of these schools represent 42% of the total population of the community. The hazard risk was identified because that student population is grouped in four confined locations. Our society has been increasingly plagued by a phenomenon of active shooter/mass casualty events. The federal government has defined an active shooter as "an individual actively engaged in killing or attempting to kill people in a confined and populated area" (Blair & Schweit, 2014, p. 5). The Federal Bureau of Investigation (FBI) has extended its definition to include individuals because some incidents have involved more than one shooter. The definition also implied that firearms were used in the commission of the crime (Blair & Schweit, 2014). The FBI has issued several reports in an effort to disseminate accurate data on an increasing frequent societal phenomenon so that first responders and other interested parties can prevent or mitigate future occurrences.

Williamson Fire & Rescue has made no plans for responding to or mitigating an active shooter/mass casualty event. A review of FBI reports on active shooter incidents from 2000 through 2017 confirmed that the number of these events is increasing as time goes by. The

studies also identified three location types which historically, these events have been more likely to take place. Williamson Fire & Rescue's service area contains all three of these location types. The FBI reports can also be reviewed for data on the quantity of casualties at these incidents. This type of statistic can help Williamson Fire & Rescue plan to deliver adequate aid to victims.

In a 2014 report, the FBI identified 160 incidents between 2000 and 2013 that met certain criteria to be labeled an active shooter event (Blair & Schweit, 2014). Those criteria excluded events where firearms were employed as part of or subsequent to another crime such as robbery or drug violence. Incidents involving firearms that were accidental or not intended to hurt others were discarded from the collected data. The incidents were included in these FBI studies because first responders had an opportunity to affect the outcome of the event depending on their response to the incident (Advanced Law Enforcement Rapid Response Training (ALERRT) Center at Texas State University and the Federal Bureau of Investigation, U.S. Department of Justice, 2018). The average number of active shooter/mass casualty incidents per year for the period 2000-2013 was 11.4. A closer examination of the data per year revealed an escalating trend. During the first seven years studied, an average of 6.4 incidents occurred each year. In the last seven years, 16.4 incidents occurred annually (Blair & Schweit, 2014). A subsequent study by the FBI in 2016 found 20 active shooter/mass casualty incidents occurred in 2014 and an additional 20 incidents took place in 2015 (Schweit, 2016). The most recent study in this series by the FBI found 20 active shooter incidents occurred in 2016 and 30 during 2017 (ALERRT Center and FBI, 2018). The number of active shooter/mass casualty incidents has climbed from one in 2000 to 30 in 2017. The annual totals rise and fall from one year to the next. However, the aggregate trend evidences an increase in the frequency of these events.

The number of casualties from these events was examined while researching the frequency and impact of active shooter/mass casualty incidents. Fire departments and other first responders tasked with mitigating the emergency by treating casualties should consider worst-case scenarios. They may also plan for more realistic contingencies by studying average casualties at these incident types. A total of 486 victims were killed as a result of the incidents identified during the 2000-2013 period. An additional 557 victims were wounded in these incidents (Blair & Schweit, 2014). An average of 3.03 fatalities and 3.4 injuries were suffered at each incident. During the 2014-2015 period, 92 victims were killed and 139 wounded (Schweit, 2016). When averaged over the 40 total incidents, an average of 2.3 deaths and 3.47 wounded is calculated. The FBI study of the 2016-2017 period evidenced a much higher casualty rate. The 722 wounded and 221 fatalities increased the average to 4.42 deaths and 14.44 wounded victims per incident. It should be noted that the data for the 2016-2017 period was skewed by three incidents (Route 91 Harvest Festival, Pulse Nightclub and First Baptist Sutherland Springs in Texas) with abnormally high casualty rates (133 killed, 562 wounded) (ALERRT Center and FBI, 2018). When these three incidents are removed from the data set, an average of 3.4 are wounded and 1.87 are killed at active shooter incidents during 2016-2017. While several mass casualty incidents have resulted in great numbers of killed and wounded, most incidents average 3.4 wounded victims and 2.4 fatalities. The frequency of incidents has increased from 2000 to 2017 but the average quantity casualties has remained relatively consistent over the period. An average of six victims per incident have been encountered by first responders on these incident scenes.

The environment in which active shooter incidents have occurred should also be considered by fire departments. Fire departments across the nation have recognized the role of

preplanning in creating positive outcomes when dealing with fire or hazardous materials. Fire departments and other first responders should also consider the settings in which active shooter/mass casualty incidents occur. These types of location may be identified within their jurisdictions and plans created to facilitate more effective mitigation.

During the period from 2000 to 2013, 45.6% of active shooter/mass casualty incidents occurred at business locations (Blair & Schweit, 2014). In 2014 and 2015, 37.5% of these incidents happened in commercial settings (Schweit, 2016). Active shooter/mass casualty incidents played out at businesses 34% of the time during 2016-2017 (ALERRT Center and FBI, 2018). The percentage of active shooter incidents playing out in the workplace has declined over the years but remains the most likely venue for these events. The fire department's service area did not contain many large commercial occupancies but a variety of small businesses exist scattered throughout the community. Places of business have historically been a target of active shooter perpetrators.

The second most likely location for an active shooter/mass casualty incident is a school. The Williamson Fire & Rescue response area was found to contain four public schools. During the 2000-2013 period studied by the FBI, 24.4% of incidents occurred in educational environments (Blair & Schweit, 2014). In 2014 and 2015, 15% of active shooter incidents happened in schools (Schweit, 2016). 14% of active shooter incidents took place in a school setting in 2016 and 2017 (ALERRT Center and FBI, 2018). Active shooter incidents at schools during the 2000-2017 period studied by the FBI identified 137 fatalities and 159 wounded victims. These casualties were especially traumatic for the communities involved as most victims were children and historically, schools have been considered by the community to be safe places for learning and discovery. A school occupied by students would represent a high

percentage of a community's population concentrated in one place and a portion of the population least able to defend or protect itself. Fire departments have long considered schools a community target hazard for threats such as fire (Fennelly & Perry, 2014). They now find themselves considering active shooter incidents when preplanning these locations.

The third most likely location for an active shooter/mass casualty incident to occur within a community was in open assembly spaces. These include parks and a variety of other open-air venues. During the 2000-2013 period studied by the FBI, 9.37% of the 160 incidents occurred outdoors (Blair & Schweit, 2014). In 2014-2015, 15% of the 40 incidents happened at open space locations (Schweit, 2016). During 2016 and 2017, 28% of the 50 incidents meeting the FBI definition of an active shooter/mass casualty incident took place at outside assembly locations (ALERRT Center and FBI, 2018). Combined, these outdoor incidents since 2000, averaged four fatalities and 17.57 wounded victims per event. The Williamson Fire & Rescue service area was found to contain several public parks and recreational areas as well as an amphitheater type music venue designed for up to 8,000 concert-goers.

Active shooter/mass casualty incidents occurred at a variety of other location types but in much smaller percentages. One of these more unlikely location types were houses of worship. However, the purpose for which these structures are used and the cultural reverence and respect with which most community members view these locations made an active shooter event very traumatic for the community as a whole. From 2000 to 2013, only 6 incidents representing 3.75% of the total number of incidents during the period happened at houses of worship (Blair & Schweit, 2014). In 2014 and 2015, only 2 incidents representing 5% of the incidents during the period occurred in churches (Schweit, 2016). From 2016 through 2017, 8% of active shooter incidents took place in a house of worship (ALERRT Center and FBI, 2018). Only ten incidents

took place in houses of worship during the period studied by the FBI, resulting in an average of six dead and 5.4 wounded per incident. The fire department's service area was found to contain 14 houses of worship of varying faiths. These churches were used by the community not only as centers of religious life but as gathering places for community events. As such, they deserved consideration by the fire department when preplanning for active shooter/mass casualty response.

The purpose of this applied research project was to develop a plan for Williamson Fire & Rescue's response to active shooter/mass casualty incidents. This project worked to achieve three of the five strategic goals of the United States Fire Administration. The research sought to reduce risk within the Williamson community by mitigating the harm caused by active shooter/mass casualty incidents. The project produced a standard operating guideline as well as recommendations to implement the guideline operationally. This meet the goal of improving preparedness and local planning. Finally, the project would improve Williamson Fire & Rescue's ability to respond to and recover from all hazards ("USFA Strategic Goals," 2014).

Literature Review

The problem of formulating an appropriate and effective response to active shooter/mass casualty incidents has vexed fire and emergency services organizations. A body of professional literature has been produced by a wide range of stakeholders in the 20 years since this phenomenon began to plague our society. As research and practical experiences have accumulated over time, recommendations for training, planning for response has evolved to reflect a maturation of group thought on what best practices for response to active shooter/mass casualty events ought to be. The law enforcement component of response to these events has also evolved over time but that portion was not reviewed except on the issues such as coordination, scene security and patient treatment. This review focused on issues that impact

victim survival rather than law enforcement as those directly influenced the development of an active shooter response plan for Williamson Fire & Rescue. This review identified three primary areas of focus when reviewing literature to develop response plans for active shooter/mass casualty incidents: planning, training and response.

The most significant single piece of literature reviewed was the National Fire Protection Association's provisional *Standard for an Active Shooter/Hostile Response (ASHER) Program*. This standard, NFPA 3000, was of paramount importance because it produced a "consensus standard for the components of a multidisciplinary program for preparedness, response and recovery to active shooter and/or hostile events" (National Fire Protection Association [NFPA 3000], 2018, p. 1). As a consensus standard, it was viewed as a recommended best practice and would likely be referenced as what should have been done in response to an active shooter incident in the event of a lawsuit after the fact. Fire departments wishing to avoid liability often conform to NFPA standards even though they have not been adopted into law within their jurisdiction.

Planning for an active shooter/mass casualty incident may seem less proactive than efforts such as bleeding control or rescue task force training to some but without in-depth preplanning, the opportunity to implement specific strategies may be missed (Ludwig, 2013). In an article preparing for active shooter scenarios, Jim McKay describes the danger of preparing for the last disaster rather than those that might occur (McKay, 2013). McKay advocates for emergency planning at schools and businesses that focus on all hazards rather than narrowly focusing on specific events such as fires, tornados or even active shooters. Once adopted, the plan should be exercised, critiqued and modified. McKay also calls for fire departments to engage with schools and businesses planning for incidents. Successful mitigation will require

participation from all stakeholders and planning facilitates that success (McKay, 2013). Planning is preparation for incident response by fire departments and/or other first responders but it also should involve location specific planning by owner/occupants designed to prevent, limit the damage and facilitate mitigation of active shooter incidents. This philosophy of stakeholder engagement in planning for active shooter/mass casualty incidents was supported by the National Fire Protection Association's (NFPA*) Standard for an Active Shooter/Hostile Event Response (ASHER) Program*. Known more commonly as NFPA 3000, Chapter 4 of the standard called for the inclusion of all stakeholders in the development of active shooter programs (National Fire Protection Association [NFPA] 3000, 2018, Chapter 4). NFPA 3000 also called for community risk assessments to identify active shooter hazards. A detailed list of location features was identified in the standard to aid in risk assessment for that specific facility (NFPA, 2018, Chapter 5). Such detailed plans would require the participation of location owners/managers rather than just the primary response disciplines of law, fire and EMS. NFPA 3000 called for the inclusion of the public in planning for active shooter events. While the standard recommended the public be educated on self-preservation and bleeding control techniques for use on victims, it also expected them to develop preparedness plans and participate in a location's emergency action plan (NFPA 3000, 2018, Chapter 16). The federal government endorsed this concept of public participation on safety planning. A detailed guide for businesses wishing to create emergency operations plans was issued by the FBI in March of 2018. Recognizing the need for national preparedness, the guide attempted to help businesses create plans in conjunction with first responders for all manner of emergencies including active shooter scenarios (Federal Bureau of Investigation [FBI], 2018). The Department of Homeland Security has also published a guide for business owners. The guide provided instruction on basic

reactions such as choosing to evacuate, hide or engage the shooter depending on the most reasonable effort to preserve life (Department of Homeland Security [DHS], 2008). The booklet also promoted the creation of an emergency action plans specific for that business and training on that plan to maximize the effectiveness. The guide also instructed business owners on coordinating with first responders before and during an active shooter incident (DHS, 2008)

Schools have been the location of active shooter/mass casualty incidents. The Federal Emergency Management Agency's (FEMA) *Guide for Developing High-Quality School Emergency Operations Plans* stated that "it is critical that schools work with first responders, emergency management staff, and all community partners to identify, prepare, prevent, and effectively respond to an *active shooter* situation in a coordinated fashion" (U.S. Department of Education, 2013, p. 56-57). Historically, school buildings were designed to be welcoming with multiple entrances and large windows. This architecture was an attempt to promote a positive learning environment but does not obstruct a terrorist attack. In an article on safety and security in the school environment, Alex Szachnowicz reported that most school resource officers (SRO) rated their schools as vulnerable to attack and unprepared to respond appropriately (Szachnowicz, 2003). The survey referenced by Szachnowicz also reported that most SROs felt that it was easy to gain access to the school building during the school day (Szachnowicz, 2003). While school culture across the county has made great strides toward hardening their buildings to prevent attacks since that study was conducted in 2002, it will take many years to replace or modify school buildings to maximize their defensibility. Szachnowicz also questioned the feasibility of a maximum-security school building that also fosters a nurturing learning environment (Szachnowicz, 2003). He called for a thoughtful balance of threat prevention with a preservation of the learning environment.

Schools should develop emergency operations plans that address active shooter/mass casualty incidents. The FEMA guide for developing emergency operations plans for schools noted that the planning process is not complete until the Emergency Operations Plan (EOP) has been shared with first responders. The guide also recommended drills or exercises that include first responders (U.S. Department of Education, 2013). Fire departments can proactively participate in the planning process to provide expertise in evaluating structures and gain insight into the on-site response to which they will be deploying in the event of an active shooter incident.

Houses of worship have also been the target of active shooter aggression. Literature directed toward pastors and other church leaders recommended planning efforts similar to businesses and schools. In Andrew G. Mills article on protecting a congregation, the creation of an emergency operation plan and a site survey that is shared with law enforcement and other emergency responders was advised (Mills, 2007). Mills also recommended cooperation with responders by church staff and training to maximize effective communication. A team mentality was preached by Keith Loria in an article for Worship Facilities. Loria believed that churches which plan and drill for active shooter events were more likely to proactively influence the outcome of such an incident (Loria, 2018). Loria also echoed the importance of coordinating plans with first responders so that they are an integral part of the team. He offered a checklist that a church administrative staff could use to minimize opportunities for an active shooter to hurt others and maximize the efforts of responders to stop the aggression and mitigate the harm. A fire department presenting this checklist to a church developing their emergency operation plan would encourage thorough planning and a degree of uniformity despite the need to tailor an EOP to the specific needs of each site.

Planning for active shooter response by fire departments was acknowledged by multiple literary sources as critical to effective mitigation. In 2013, during the aftermath of the active shooter tragedy at Sandy Hook Elementary School, a committee was formed to improve victim survivability during and after active shooter incidents. The American College of Surgeons in conjunction with the FBI, convened the Joint Committee to Create a National Policy to Enhance Survivability from Intentional Mass Casualty and Active Shooter Events. The work product of this committee became known as the Hartford Consensus after the location of the committee meetings. Over a three-year period, four reports were released by the committee designed to minimize the loss of life at active shooter/mass casualty incidents.

The first Hartford Consensus Report dealt primarily with tactics and actions to improve victim survival chances. These actions were described later in this literature review. The first report did conclude that treatment of victims is a shared responsibility of the major players in the response to active shooter incidents: law enforcement, fire/rescue and EMS (Jacobs et al., 2013). The Hartford Consensus described the response to an active shooter incident as a continuum that must have a shared vocabulary, jointly developed response procedures and experience working together during response exercises (Jacobs et al., 2013). The Hartford Consensus called for fire departments to plan for active shooter events and described multi-discipline response planning as critical to successful mitigation.

A second Hartford Consensus report was issued several months after the initial report. That 2013 report elaborated on the need combat trauma training for responders and even members of the public to minimize the loss of life from an active shooter incident. Much of the second consensus report described metrics for training but noted that extensive planning would be required for implementation. A call for training the uninjured bystander to act appropriately

in the immediate aftermath would require the design of education programs and planning to implement. Identification of target hazards based on previous threats and active shooter incident history must take place as part of the planning process. Those plans should consider how to support the bystanders that would be the true first response to the incident. Planning was described as necessary to position equipment for victim treatment at locations determined to be target hazards (Jacobs et al., 2013). In an article for Fire Engineering, Steven Hamilton recognized the fire service's penchant for developing "canned" responses to incident types. Hamilton wrote that this concept can be extended to active shooter incidents when evaluating the fire department resources needed as part of the larger incident response (Hamilton, 2014, p. 59). The size and type of fire department would affect this evaluation. A career department could define its response capability with a certainty not possible for a fire department that relies on volunteer staffing. Hamilton suggested beginning with a Level Four incident within the National Incident Management System as a baseline metric. Level Four incidents could be handled with a first alarm structure fire response. If an active shooter incident was perceived to require more fire department resources, then a Level Three response might involve an additional alarm assignment or a mutual/automatic aid request. An escalation in casualties would have a corresponding increase in response (Hamilton, 2014). The planning process should identify the quantity of resources anticipated, the qualifications needed to be a part of the response and the availability of those resources.

The United States Fire Administration published a document called *Fire/Emergency Medical Services Department Operational Considerations and Guide for Active Shooter and Mass Casualty Incidents* in 2013. Issued after the initial Hartford Consensus paper, the document made a series of planning recommendations based on the Hartford Consensus'

recognition of the link between early hemorrhage control and victim survival rates. Specific recommendations for fire department standard operating procedures are made. The document called for local protocols for responding to active shooter incidents that were jointly developed by law enforcement, fire and EMS. A plan for rapid treatment and evacuation of casualties should be created and trained on together by all first responder groups. Also recommended was the use of the National Incident Management System (NIMS), the Incident Command System (ICS), a single incident command post and use of unified command to coordinate the actions of the various responders (United States Fire Administration [USFA], 2013).

The USFA guide called for recognition that active shooter incidents are complex operations with multiple variables and successful mitigation requires preparation and planning. The guide acknowledged that the active shooter event is a criminal act and the law enforcement (LE) responders will be the on-scene lead in the response. Fire and EMS are directed to assemble at the LE command post to initiate a unified command (UC). The guide recognizes that the capabilities of fire and EMS agencies will vary from one jurisdiction to the next. The roles of fire and EMS in efforts to move into areas under threat and remove patients would vary depending on capability. This capability should be defined during pre-incident planning (USFA, 2013).

The Hartford Consensus suggested that response planning to adopt a set of actions defined by the acronym THREAT. The first letter represented threat suppression, the second letter signified hemorrhage control, and the next two letters are represented by rapid extrication. The final two letters describe assessment by medical providers and transport to care (Jacobs et al., 2013). The USFA guide for active shooter response called for the creation of a casualty treatment plan that incorporates the Hartford priorities. The plan should identify who is

responsible for locating victims, who will triage those victims and offer stabilization care and who will move those patients to a safe location and ultimately transport for definitive care. The USFA guide advocates the use of Tactical Emergency Casualty Care (TECC) and calls for all responders, including law enforcement, to be TECC trained (USFA, 2013). TECC mimics guidelines developed by the military for trauma care in combat.

The FEMA guide also discussed the uses of a Rescue Task Force (RTF). The Hartford Consensus' recognition of the link between early hemorrhage control and victim survival has driven the development of the RTF. The RTF was designed to deploy into areas cleared by law enforcement but not secured. The RTF (equipped with ballistic protection and escorted by law enforcement) would provide point-of-wounding care along TECC principles and remove the victims from the unsecure area to a designated secure place for transport to the hospital (USFA, 2013). Originally conceived by the Arlington County Fire Department, the Rescue Task Force was employed by that organization at an active shooter scenario with 44 victims. The RTF was able to reduce the time needed to achieve patient stabilization from two hours and five minutes to 30 minutes (Chino Valley Fire Training, 2014). The USFA guide recognized that limited fire/rescue resources may limit the scope of RTF activity or even preclude their use (USFA, 2013). A small volunteer fire department would not have the same staffing or equipment to deploy an RTF as a municipal department. Planning must be realistic and reflect the honest capabilities of the responders in that jurisdiction.

Interaction with the media and public was recognized by the USFA guide as an important piece of the planning puzzle. Active shooter events large and small should be expected to generate intense public scrutiny and a heavy media presence. Planning must include activation of a Public Information Officer (PIO) and address the need to corral the media and limit access

to various parts of the scene such as the command post, Casualty Collection Points (CCP), and even locations for survivors and family reunification staging (USFA, 2013). Depending on the size and resources of the responding agencies as well as the geography of the location, scene control may be very difficult. Planning for active shooter incidents must take into consideration scene control and designate responsibility for role.

The creation of an Emergency Operations Plan (EOP) was recommended by the USFA guide as a generic plan that could be modified to fit most emergencies including active shooter incidents. The EOP should be written. It should be both multi-agency and multi-disciplinary. The EOP should designate unified command and recognize common terminology between agencies and disciplines. The EOP should specify roles for each discipline and describe when during the course of the incident, those roles would be activated (USFA, 2013). The roles each agency and discipline should assume will vary depending on capabilities. An assessment of needed resources for active shooter events might reveal that mutual aid from outside agencies is required. The planning process should identify mutual aid resources so that they may be included in the EOP drafting process as well as exercises that train for active shooter responses (USFA, 2013).

The planning process for active shooter incidents must consider the certainty of a multi-agency and multi-disciplinary response. These responders each have different roles and priorities. Planning should define goals for all parties involved and a unified command structure would promote cooperation and limit conflicts that hinder the ultimate goal of improving survivability for the victims. Good communication was described as an attribute needed to facilitate cooperation. In a publication describing the state of preparedness for active shooter events in 2016, a private corporation called Everbridge noted a critical need for communication

pathways between the various agencies and disciplines involved. Their study cited the need for effective emergency communications on scene as the top priority of those responders surveyed (Everbridge, Inc., 2016). A variety of factors from geography to purpose that change from one location to the next influence the reliance on communications during an active shooter mitigation process. The planning process must ensure that both verbal and technological pathways for communication are considered and available. Many of the agencies responding to these events do not share radio frequencies or bands and cannot communicate directly without being face-to-face. Planning must establish ways to overcome that obstacle before the event.

The second major theme identified during a review of the literature regarding effective response and mitigation of active shooter/mass casualty incidents was the need for training. Specialized training that focused on the goal of victim survival while coordinating the efforts of various public safety disciplines and agencies was the consensus of most of the sources reviewed. The recent issue of NFPA 3000 has summarized an effort that has evolved over the last several years to effectively respond to a growing trend of violence. Many of the sources reviewed provided a foundation on which NFPA 3000 was built. NFPA 3000 has reviewed the evolution of thought and progress on responding to active shooter incidents and provided specific guidance to fire departments and other agencies. While many jurisdictions choose not to adopt NFPA standards into law, they are often referenced as consensus industry standards by courts of law. A fire department that follows the recommendations of NFPA standards when formulating response guidelines can point to that consensus as the best practice that it attempted to follow if the legitimacy of its actions are brought into question.

Chapter 13 of NFPA 300 provided guidance to fire departments on the specific competencies for fire and EMS responders. This portion of the standard defined what fire and

EMS responders were expected to do during an active shooter incident. NFPA 3000 stated that fire department responders were "expected to protect themselves, call for trained personnel, and provide triage, rapid medical intervention and/or transport of the sick and injured" (NFPA 3000, 2018, Chapter 13.1.3.1). Chapter 13 of NFPA 3000 also stipulated that firefighters must be trained to "respond effectively and efficiently in an integrated manner with law enforcement" (NFPA 3000, 2018, Chapter 13.1.4.1). This expectation supported the planning goal of facilitating a multi-disciplinary response.

NFPA 3000 (Chapter 6.2.1) called for fire departments to establish an active shooter/mass casualty response plan that is based on community risks and resource capabilities (NFPA 3000, 2018). The degree to which firefighters are involved at an active shooter incident is dictated by the predetermined emergency operations plan. That plan should be based on the risk assessment and response capabilities for that jurisdiction. Chapter 13 of NFPA 3000 defined competencies for firefighters responding to active shooter events, vehicle-as-a-weapon incidents, improvised explosive device (IED) incidents, fire and smoke-as-a-weapon incidents, and immediately dangerous to life and health (IDLH) atmospheres (NFPA 3000, 2018). This delineation by the standard recognized that not all mass casualty events involve only use of a firearm to harm.

Chapter 13's competencies for an active shooter event specified specific knowledge of procedures. These procedures, created during the planning process must be taught to responders during the training process. Firefighters should be trained to understand:

1. Incident notification procedure
2. Resources available or responding
3. Activation procedure for the active shooter plan

4. Communications procedures
5. Procedure for interaction/notification with the hospital(s)
6. Mayday declaration procedures
7. Procedure for reporting to a unified command
8. How to determine care based on the threat level
9. Delineation of zones (hot, warm and cold)
10. Procedure for patient distribution to medical facilities
11. Location and use of medical supplies
12. Appropriate use and location of PPE and/or ballistic protective equipment (BPE)
13. Procedures for operating with other agencies or disciplines
14. Care and rescue concepts such as rescue task force, law enforcement rescue team, protected island operations and protected corridor operations
15. How to work with local law enforcement
16. Staging and vehicle positioning
17. How to identify various responders and their roles
18. Procedure for transition to a recovery operation
19. How to recognize explosive, incendiary and other devices designed to harm
20. The roles of family information centers, hospitals, transport zones, debriefing locations and public information briefs

These competencies were created to ensure the skill set of fire/rescue or EMS personnel is adequate to contribute to incident mitigation and provide for a measure of scene safety (NFPA 3000, 2018, Chapter 13.4.1.2)

An active shooter/mass casualty incident would require responses from multiple agencies and multiple disciplines. Effective communication during the event must rely on coordinated dispatching by 911 call centers. In an article for Public Safety Communications, Bob Smith described active shooter incidents as "fast-paced, dynamic… situations posing any number of opportunities for responders to become victims" (Smith, 2007). Smith went on to define ensuring responder safety as a primary responsibility of the telecommunicator. This responsibility is fulfilled, according to Smith, by collecting and disseminating incident facts as accurately and quickly as possible (Smith, 2007). During the active shooter incident at a military recruiting office in Chattanooga, Tennessee, call takers received ten 911 calls within the first minute and 37 more calls were received during the 11 minutes that elapsed before law enforcement declared the suspect down (Massengale, 2016). In addition to the influx of 911 calls, dispatchers were tasked with notifying multiple police, fire and EMS agencies. They also placed the recruitment center, several other military facilities and a community college on lock-down (Massengale, 2016). The dispatch center employees had received several in-service classes on the management of active shooter events and multi-tasked well due to their training. The primary communications issue that hindered operations in Chattanooga was identified as managing talk groups and radio frequencies. Multiple agencies on separate talk groups required the dispatch center to patch talk groups together which was not a skill set that many communications center employees were adept at (Massengale, 2016). Communications for responding agencies that operate on separate radio systems or frequencies will be difficult or impossible. Training exercises should help identify areas of weakness in communications. In an article for Public Safety Communications, Tony Harrison stated that telecommunicators are often left out of training scenarios. Harrison described the flow of information in an active shooter

incident as critical to outcomes since accurate information is needed for responders to make life-and-death decisions (Harrison, 2015). Solutions for facilitating communications between responders must be developed and practiced to ensure feasibility.

Having established responder competencies in Chapter 13, NFPA 3000 Chapter 14 describes the PPE and BPE necessary for training and incident response. The level of protection prescribed by Chapter 14 was dependent on the zone in which the firefighter is operating. In the cold zone, firefighters were directed to only wear a garment that identifies their organization or a visible identification such as a badge or identification card unless directed otherwise by the incident commander. The identifying garment allowed those seeking help to locate the firefighter and those seeking to neutralize the assailant from targeting the firefighter. Firefighters operating in the warm zone were supposed to wear body armor, an identifying tag or clothing item and possess a radio or other means of communication. The hot zone also necessitated body armor, a means of communication and an identifying tag or garment (NFPA 3000, 2018, Chapter 14.2.3). Body armor should also have an externally visible label that described the agency or role of the responder (NFPA 3000, 2018, Chapter 14.4).

Body armor specifications were also described in Chapter 14 of NFPA 3000. A minimum standard of Level III-A ballistic protection vest was established by NFPA 3000 (NFPA 3000, 2018, Chapter 14.3.1). Nationally accepted ballistic protection levels were established by the National Institute of Justice. The NIJ classified levels of protection based on performance test standards that require a bullet not perforate the vest ("Body Armor Performance Standards," 2018). The following ballistic protection levels have been established by the NIJ:

Level IIA- tested to stop 9mm and .40 S&W handgun rounds

Level II- tested to stop .357 Magnum handgun rounds

Level IIIA- tested to stop .357 SIG and .44 Magnum handgun rounds

Level III- tested to stop 7.62 FMJ rifle rounds

Level IV- tested to stop .30 caliber armor-piercing rifle rounds

These levels of protection and the corresponding examples of bullet calibers that will be stopped at that level were documented on the NIJ website (*Armor Protection Levels*, 2018).

During the post-incident analysis of the response to the Columbine High School shooting incident in 1999, law enforcement identified a critical failure in its tactical response. Conventional wisdom and tactics had patrol officers initially secure the scene perimeter and await a SWAT team that would enter the area, neutralize the threat and secure the whole scene. Incident reviews discovered that the assailants continued to injure and kill victims in the time period between the first arrival of officers and the insertion of a SWAT team. After Columbine, law enforcement designed a more proactive response that called for officers to insert themselves into the hot zone as they arrive, effectively swarming the assailant until the threat is neutralized. Studies on how active shooter events unfold have revealed that many shooters continue to kill until confronted and once confronted, 40% of active shooter kill themselves (Ludwig, 2013). Moving to the sound of gunshots while ignoring any other distractions such as panicked civilians, dead or wounded victims has become standard procedure for most law enforcement agencies (Smith, Iselin, & McKay, 2009).

The need for a medical component to a SWAT team was recognized by many jurisdictions early into the active shooter/mass casualty phenomenon. A fire/EMS companion to the SWAT concept was developed by some communities but the focus was often limited to providing care to the team members that might be injured. Tactical Emergency Medical Services (TEMS) was developed to provide a measure of organization to the variety of tactical EMS

components that were being deployed with SWAT teams (Pulvermacher, 2016). No national standard for TEMS was ever adopted and the development of TECC has eclipsed TEMS as nationally accepted standards were developed. The primary weakness of TEMS as an active shooter response strategy was that too many lives were lost while waiting for a SWAT team to arrive and deploy. Law enforcement agencies began moving away from reliance on the SWAT/TEMS concept after the Columbine High School incident (Pulvermacher, 2016). A more proactive means of delivering rapid medical care was needed.

The Rescue Task Force concept originated with the Arlington County Fire Department in Virginia. The RTF was designed to provide immediate medical interventions that stabilize the victims for evacuation to more advanced care in a safe location. RTF was designed to be deployed before the whole scene is secured. The initial law enforcement response may be still searching for or engaging the perpetrator while additional officers escort a properly equipped and trained fire/rescue component to find victims in need of care and removal to a collection point for transport (Tan, 2015). The RTF should be comprised of fire or EMS personnel and members of law enforcement. The fire and/or EMS personnel are trained and equipped to render immediate aid to maintain life and remove victims to a safe location where more detailed care can be provided prior to transport to a medical facility. The law enforcement members of the RTF may be trained to provide aid in accordance with Tactical Emergency Casualty Care (TECC) but their primary role is force protection (NFPA 3000, 2018). The incorporation of TECC into fire department training for active shooter events was recommended by the second Hartford Consensus paper (Jacobs et al., 2013).

Fire departments that decide to employ the RTF concept as part of their active shooter response plan were directed by NFPA 3000 to increase the level of protective equipment

provided to personnel. Members of the RTF were encouraged to possess a ballistic helmet, flash light, first aid kit, medical gloves, and a radio with earpieces and remote mic. This equipment is in addition to a Level III-A ballistic vest (NFPA 3000, 2018, Chapter 14.3.2.1). The implementation of an RTF may not be possible for some fire departments. In his article for Domestic Preparedness, Robert Mueck noted that departments with limited budgets or volunteer departments reliant on donations may find it difficult to purchase the necessary equipment in adequate quantities (Mueck, 2017).

Fire Departments that adopt the RTF concept as part of an active shooter response plan must also define the medical equipment that will be deployed with each RTF. Arlington County Fire Department, which developed much of the RTF concept, equipped each team with a tourniquet, pressure bandage, occlusive dressing chest seal, clotting agent and a needle set for chest decompression (Smith et al., 2009). Recommendations for medical supplies to be carried by an RTF have evolved over time. By 2012, the Arlington County Fire Department had added nasopharyngeal airways, King airways and rolled gauze to their RTF medical supply list (Arlington County Fire Department [ACFD], 2012, p. 3). The International Public Safety Association recently recommended the following equipment be provided to each RTF team member:

- Multiple tourniquets
- Multiple chest seals
- Multiple compression bandages
- Multiple decompression needles
- Quick clotting agents
- Advanced airway equipment
- Nasal pharyngeal airways
- Trauma shears

- Medical gloves
- Safety glasses
- Lumber crayon
- Patient tracking cards
- Patient triage system
- Gauze (variety of sizes)
- Glow sticks
- Hypothermia blankets

This supply list would allow the RTF to treat multiple patients if they are encountered and provide the rapid patient stabilization that they are expected to provide (International Public Safety Association, 2017).

In an article for Fire Engineering, Joe Pulvermacher counseled thoughtful consideration for fire departments developing active shooter medical response kits. Pulvermacher noted that large kits allowed the RTF to treat more patients but responder movement and therefore efficiency was limited. If a response kit was too small, patient outcomes might suffer from lack of interventions. Pulvermacher's Oak Creek Fire Department in Wisconsin sought to find a balance when designing their active shooter response kits. They identified several features important to fulfilling their response plan. The kit should be able to be opened completely, carry multiple supplies for treating more than one victim, be able to attach to the responder, and affordable so that multiple kits could be distributed across the department. The limitations of a smaller kit when faced with an incident that involved multiple victims were overcome by the OCFD by including resupply bags that allowed additional equipment to be staged in convenient locations at the incident. Pulvermacher also recommended that all RTF groups carry equipment to facilitate evacuations. Locations such as schools, businesses and manufacturing facilities may have layouts that hamper the removal of victims to a casualty collection point or other place that

allows for triage, additional care or transport. An RTF may be required to triage on site and begin to remove patients to a safer location. (Pulvermacher, 2016). Collapsible stretchers or webbing and tarp devices may be issued to the RTF and deployed as needed.

The Hartford Consensus recognized that military experience in treating combat casualties has shown that the most preventable death in victims with a penetrating traumatic injury was hemorrhage (Jacobs et al., 2013). The Consensus assumed that gunshot injuries inflicted during domestic active shooter incidents would be similar to those occurring in combat situations. A study was undertaken in 2016 to verify that assumption since a significant emphasis on tourniquet usage was being advocated based on the belief that hemorrhage control efforts would improve survivability. The study found that 58% of victims from the incidents reviewed suffered head or chest wounds rather than extremity injuries for which tourniquet use might impact survival (Smith, Shapiro, & Babek, 2016). The study also found that only 7% of the fatalities in those incidents suffered wounds that might be survivable (Smith et al., 2016). The study's authors concluded that tourniquets would not be sufficient to improve patient outcomes and questioned the efficiency of training responders in a manner that relies on tourniquets as a primary tool. However, other studies disagreed with those conclusions. The Boston Marathon bombing incident on April 15, 2013 caused 127 traumatic injuries that required transport to a trauma center. Of those injuries, 31 displayed evidence of an exsanguinating hemorrhage and 26 patients had tourniquets applied in the field (Gates et al., 2014). Not all active shooter/mass casualty incidents that fire departments will respond to have involved firearms. The tourniquet as a life saving device is not applicable in every mass casualty situation but has been a life saving asset at some incidents.

The authors of the article *Toward the Sound of Shooting* pointed out that the greatest weakness of EMS response to active shooter incidents is the delay caused by units waiting in staging until the scene is declared safe by law enforcement (Smith et al., 2009). Victims from active shooter incidents have perished due to a delay in care. NFPA 3000 recognized the need to provide threat-based care during an active shooter incident. Threat-based care was defined in the standard as "medical care provided as determined by the conditions that are present" (NFPA 3000, 2018, p. 9). The level of patient care provided and the setting it is provided in should be determined by the measure of response a fire department delivers. Training for response should be dictated by that measure of response. NFPA 3000 stated that emergency patient care should follow the guidelines of Tactical Emergency Casualty Care (TECC) (NFPA 3000, 2018, Chapter 13.2.2).

The National Association of Emergency Medical Technicians formed the committee that drafted TECC. The association also developed a course based on the TECC guidelines. The TECC course educated responders on how to provide care while under attack, when a threat has been suppressed but might reappear and during an evacuation process ("Tactical Emergency Casualty Care," 2018). The TECC guidelines described a range of medical interventions that may delivered as part of threat-based care. The fire department and the providers scope of practice and level of licensure should dictate the skills that would be applicable for training and actual response to an active shooter/mass casualty incident. Those limitations are recognized by TECC which noted that the care provided is "based upon individual first responder training, available equipment, local medical protocols, and medical director approval" (National Association of Emergency Medical Technicians [NAEMT], 2015, p. 9). Fire departments that deliver education on patient care during active shooter incidents using TECC courses have met

the expectations established by NFPA 3000. TECC training meets the standard but the practice would be limited by the response plan and local protocols.

NFPA 3000 specifically addressed training for active shooter/mass casualty incidents in Chapter 15. The standard called for the establishment of a training program that is based on the risks expected, the tasks to be performed and the scope of response described by the departments plan for active shooter incidents. Initial and periodic training should also be conducted with all responding agencies and training at potential target locations within the jurisdiction was encouraged to familiarize responders with that hazard location (NFPA 3000, 2018, Chapter 15). Specific curriculum for active shooter training was not addressed by NFPA 3000. Those types of details would instead be driven by the scope of the response plan developed by each individual jurisdiction. The standard advised that the training delivered must be adequate to prepare responders to carry out the active shooter response plan.

NFPA 3000 recognized that a standard for active shooter response cannot be one size fits all. A realistic response plan must reflect the resources and capabilities of the fire department as well as the specific hazards faced by the individual community. Issues of competencies, training, and equipment are presented in the standard but the degree to which some of the details are implemented will depend on the scope of the plan that is adopted by the jurisdiction. NFPA 3000 offered specific recommendations on incident management that can be applied to responses by all fire department.

Chapter 8 of NFPA 3000 described the management of active shooter/mass casualty incidents. The use of the Incident Command System and establishment of a Unified Command at incidents that multiple disciplines are mandated (NFPA 3000, 2018, Chapter 8.2.1). The Unified Command is provided with a set of goals:

- Safety of responders and citizens
- Conduct a risk assessment of the situation
- Facilitate communications during the incident
- Develop an incident action plan (IAP) that manages the incident using the available resources and ensures span of control
- Maintain personnel accountability
- Review and revise the IAP as needed
- Manage the flow of public information
- Maintain the unified command until the scene stabilization allows it to be terminated

The Unified Command should use their combined resources in a coordinated effort to accomplish shared objectives that mitigate the incident (NFPA 3000, 2018, Chapter 8.2.3.2). The U.S. Fire Administration's Guide for Active Shooter and Mass Casualty Incidents described these events as complex and fast-moving and requiring coordination of multiple resources. The guide further described the use of ICS and the establishment of a Unified Command as necessary to achieve the goals of life safety and incident stabilization (USFA, 2013). The use of ICS and Unified Command was listed as the most important objective when implementing standard operating procedures in a position statement by the International Association of Fire Chiefs (International Association of Fire Chiefs [IAFC], 2018). NFPA 3000 did not limit the agency or discipline representatives that make up the Unified Command but did recommend key disciplines that should be included most of the time. A representative from fire, law enforcement, EMS, and emergency management should be considered for the Unified Command (NFPA 3000, 2018, Chapter 8.4.2). The Unified Command was directed to "evaluate the incident from their perspective, and these independent evaluations shall be combined to form an incident action plan" (NFPA 3000, 2018, Chapter 8.4.4).

It is also important to note that Chapter 8 of NFPA 3000 described the incident location as a crime scene. The standard defined all active shooter incidents aa crime scenes and that on-scene personnel should make efforts to preserve the scene (NFPA 3000, 2018, p. 8.6). Responders should focus on completing their assigned tasks and work to preserve life but must also avoid any unnecessary activity that might destroy or damage the value of evidence. Once life safety has been assured, activities that facilitate the criminal investigation such as witness collection and evidence preservation should take priority (NFPA 3000, 2018, Chapter 8.6.2.2).

Due to changes in philosophy and tactics, the initial phase of an active shooter/mass casualty response has been for law enforcement officers to insert themselves piece-meal into the scene, deploying themselves toward the sound of gunfire to engage the threat. The USFA's *Guide for Active Shooter and Mass Casualty Incidents* acknowledged that law enforcement should take the lead as they locate, engage and subdue the threat (USFA, 2013). That guide recommended that fire and EMS responders locate the law enforcement command post and establish a Unified Command. Since local plans dictate the level of response delivered by fire and EMS as well as the measure of participation, the USFA guide described several functions that might take place while law enforcement assesses the situation and establishes threat zones. Branch groups for fire and EMS should be formed and while the Operations Section Chief (OSC) role should be staffed with a representative from law enforcement, a deputy OSC for fire and/or EMS could be appointed to manage those resources as assigned by the Unified Command. A method of maintaining accountability predetermined in the planning for active shooter incidents should also be initiated. That accountability system should maintain a record of location and assignment for all responders on the scene regardless of agency or discipline (USFA, 2013). During the initial stages of an active shooter/mass casualty response, elements of

the fire department may be called upon to establish a perimeter to limit an influx of spontaneous or self-dispatched volunteers. Fire department personnel who do not have a medical role or the necessary training for providing medical care might be put to good use maintaining a cold zone perimeter at a point in the incident time line when law enforcement members must devote all of their attention to subduing the threat (USFA, 2013).

The arriving fire and EMS units should be directed to a staging location or an area in the cold zone designated by law enforcement (USFA, 2013). The primary task of fire and EMS units dispatched to active shooter/mass casualty incidents should be victim treatment. The degree and timing of interventions should vary based on the active shooter response plan (USFA, 2013). The THREAT principles established by the Hartford Consensus direct rescue and medical responders to control hemorrhage, rapidly remove victims to safety, assess injuries and expedite transport to a hospital for definitive care (Jacobs et al., 2013). The USFA guide also promoted the adoption of TECC guidelines and it's supporting medical training for all responders including law enforcement. The TECC equipment was promoted as "a valuable part of the standardized equipment for fire/EMS response assets (USFA, 2013). The Hartford Consensus III recognized the TECC guidelines as a practical means of implementing its THREAT acronym of response priorities. The third report from the consensus called for professional responders to be trained to scan for a safe environment as well as effectively use tourniquets, hemostatic dressings and tourniquets (Jacobs et al., 2015).

The Rescue Task Force concept relies on fire/EMS rescuers wearing ballistic armor under the protection of law enforcement officers to stabilize and rapidly remove victims from the warm zone (USFA, 2013). The warm zone was defined in NFPA 3000 as "an area where there is the potential for hazard or an indirect threat to life" (NFPA 3000, 2018, Chapter 3.3.64.2). The

danger for the fire/EMS component of a Rescue Task Force is that zones may become fluid and the team may suddenly find itself in a hot zone. The hot zone was defined as "an area where there is a known hazard or direct and immediate life threat" (NFPA 3000, 2018, Chapter 3.3.64.1). The inclusion of an advanced life support provider to a Rescue Task Force was advocated by the USFA Guide. The Guide recommended that fire and EMS agencies provide medical care to victims in the warm zone using TECC care based on their resources and capabilities (USFA, 2013).

Response agencies that have the means and desire to implement a Rescue Task Force commit to bringing stabilizing care to the patient. Depending on the number of victims and the number of rescuers, the RTF may need to consider a grab and exit strategy. The danger in relying on that strategy exclusively, according to Pulvermacher, is that victims may outnumber rescuers or patient stabilization may be necessary before evacuation (Pulvermacher, 2016). Once that initial care has been provided, the Rescue Task Force should remove the patient to a Casualty Collection Point (Ludwig, 2013). If the RTF encounters multiple patients in the same area, Pulvermacher described triage as an important step to determines priority for evacuation. Without triage, critical patients may hemorrhage to death while those with less significant injuries are being evacuated (Pulvermacher, 2016). The Hartford Consensus summed up the priorities for victim medical treatment when it called for initial hemorrhage control on extremity wounds via tourniquet use and penetrating trauma to the torso best treated by expediting transport to a hospital (Jacobs et al., 2013).

Fire and EMS agencies that elect not to employ a Rescue Task Force concept must rely on members of law enforcement to neutralize all threats and secure the scene before allowing medical providers into the area for victim treatment unless those law enforcement officers bring

casualties out to a safe location (Ludwig, 2013). The Casualty Collection Point was defined as a temporary gathering point for triage and stabilization of patients before removing them to an Ambulance Exchange Point (NFPA 3000, 2018, Chapter 3.3.12). The Ambulance Exchange Point was defined as the location where vehicles suitable for patient transport are gathered to be available for use in moving victims to a hospital for definitive care (NFPA 3000, 2018, Chapter 3.3.7).

Communications between different agencies and disciplines was identified as important during review of the literature as it concerned planning and training for the response. During the response, good communication was described as critical to success. During training and response to active shooter incidents, the Oak Creek Fire Department identified the use of multiple radio channels by responders as problematic (Pulvermacher, 2016). Their attempt to have a fire department command officer monitor the frequencies of different agencies and relay information to the firefighters was found to be difficult as simultaneous transmissions confused messages (Pulvermacher, 2016). If technologically practical, the use of a single channel by different disciplines performing the same task (such as a Rescue Task Force) would facilitate communication and expedite incident mitigation.

Once the Unified Command has subdued the threat, secured the scene and ensured that all victims needing medical attention have been treated and/or transported, a recovery period should begin (NFPA 3000, 2018). The USFA *Guide for Active Shooter and Mass Casualty Incidents* referred to this part of the event as post-incident or demobilization. The guide follows a typical demobilization process called for by NIMS/ICS. Written documentation of unit and individual tasks should be recorded. Thorough documentation will be critical since active shooter/mass casualty incidents are criminal acts and review in a legal process is a certainty. An

accounting of supplies and equipment used during the incident should be documented. A pre-determined plan for providing incident stress debriefing should also be initiated (USFA, 2013). The traumatic nature of an active shooter/mass casualty incident will almost guarantee the need for responders to seek help from professional counselors as well as the opportunity to process their feelings as a group during the debriefing process. The inclusion of other disciplines in this process should be attempted so that no one needing help with stress management falls through the cracks.

NFPA 3000 divided recovery operations into three periods and councils that they be included in operational plans for response to active shooter/mass casualty events. The Immediate Recovery period is described as beginning as soon as the threat has been ended. Immediate recovery plans for primary agencies such as fire departments should include crime scene preservation, victim reunification assistance, personnel accountability, damage assessment and public information coordination (NFPA 3000, 2018, Chapter 20.2). These activities are expected to occur under the direction of the Unified Command structure established for the incident.

The second phase of recovery operations described by NFPA 3000 is Early Recovery. The Unified Command should coordinate this phase in the beginning but individual agencies may assume responsibility as this period progresses depending on local protocol. The Early Recovery phase involves analyzing the incident to determine the impact on responder mental health as well as the emotional needs of victims, families, bystanders and even the community as a whole. The impact of the incident on agency resources and response capability should also be evaluated according to NFPA 3000. The management of volunteers and donations in the

aftermath of an active shooter/mass casualty incident should also be included in plans for the recovery period (NFPA 3000, 2018, Chapter 20.3).

The final phase of recovery that NFPA 3000 advocated when developing plans for an active shooter/mass casualty incident was Continued Recovery. This phase involved a continuation of victim services and the restoration of utilities and access. Businesses and public institutions such as government offices or schools that were closed because of direct or indirect damage inflicted by the incident must be restored and reopened in order for the community to return to normal operation (NFPA 3000, 2018, Chapter 20.4). Response agencies such as the fire department may not be expected to have a primary role in this phase but community specific needs may require a periphery role. The primary goals of most terrorist attacks are to interrupt the activities of society, physically harm some citizens and inflict fear on all citizens. Recovery from this physical and emotional trauma may take years and require a partnership of public and private entities (Hick et al., 2016). Fire departments, as well as other public safety entities should participate in the recovery process to aid their personnel and other members of the community. An aspect of Continued Recovery that fire departments must account for when planning for active shooter/mass casualty incidents is responder metal health support. Most fire departments do not have the resources to provide this type of care to their personnel in-house. Participation in a community resiliency center that offers mental health restoration services should be considered for the long-term health of responders (NFPA 3000, 2018, Chapter 20.4.3).

NFPA 3000 encouraged the critical review of the incident response during the recovery phase of the operation. This after-action review should examine the efficacy of the active shooter/mass casualty response plan. Lessons learned should be defined and areas of plan weakness or failure identified. The after-action report should make recommendations for

improvement to the active shooter response/mass casualty response plan and those recommendations should be incorporated into a modified response plan (NFPA 3000, 2018, Chapter 20.4.8). The changes made to the response plan after an incident should be explained to responders and incorporated into future training exercises. These changes should also be communicated to the other agencies and disciplines that are a part of the response.

Procedures

The purpose of this research project was to develop a plan for Williamson Fire & Rescue's response to active shooter and mass casualty incidents. An analysis of the issue and subsequent creation of a formal response plan was determined to fit within the framework of the USFA strategic goals and the coursework of the Executive Analysis of Community Risk Reduction class. A comprehensive literature review began at the National Emergency Training Center's (NETC) Learning Resource Center (LRC) on the campus of the National Fire Academy in April, 2018. A variety of internet search engines were employed to locate published works related to the topic.

Action research, the literature review and personal interviews were used to gather data on the subject. This project posed four research questions to fulfill its purpose of developing a plan for Williamson Fire & Rescue to respond to active shooter and mass casualty incidents. Action research was conducted toward the goal of creating a standard operating guideline that may be followed in the event of such an incident. The following questions were answered to develop the department guideline: a) What locations within the Williamson Fire & Rescue service area should be considered target hazards for active shooter incidents when developing response plans? b) What response expectations to an active shooter/mass casualty incident does law enforcement and EMS have for Williamson Fire & Rescue? c) Is there specialized equipment or

training for an active shooter/mass casualty incident response that should be acquired or delivered? d) what response guidelines for an active shooter/mass casualty incident should be adopted by Williamson Fire & Rescue?

The first research question sought to identify target hazards for active shooter/mass casualty incidents within the Williamson Fire & Rescue service area? The literature review identified several location types at which active shooter/mass casualty events historically have been more likely to occur. These location types identified were schools, churches, businesses and areas of public assembly. A list of these target hazard locations in the Williamson service area was compiled using maps and a road survey of the service area. The identification of these locations was described by NFPA 3000 as a part of the response planning process (NFPA 3000, 2018, Chapter 5). An active shooter incident at these locations would threaten the community by creating severe consequences that kill or injure multiple victims, cause economic loss, damage pubic confidence and/or disrupt community life. Planning with these specific locations in mind would allow for an effective and efficient response.

The second research question asked what response expectations to an active shooter/mass casualty incident does law enforcement and EMS have for Williamson Fire & Rescue? The literature review identified the primary public safety disciplines that respond to active shooter/mass casualty incidents as fire, EMS and law enforcement. The expectations of law enforcement as the initial lead agency due to criminal nature of these acts were deemed important to the planning of the fire department response. The expectations of EMS for a fire department response were pertinent since patient care should be a primary focus of initial response activities and Williamson EMS system provides the authorization, quality control and supervision for Williamson Fire & Rescue's emergency medical response.

Interviews were conducted with representatives of the law enforcement and EMS agencies that would respond with Williamson Fire & Rescue in the event of an active shooter/mass casualty incident within the service area. An interview with Michael Fletcher, the Williamson County Schools Director of Safety and Security was conducted on September 7, 2018. Director Fletcher is also a deputy with the Williamson County Sheriff's Office. The research questions and literature review helped develop the 10 primary questions asked of Director Fletcher (see Appendix B). An interview was also conducted with Michael Betzold, the EMS Training Officer for Williamson Medical Center. That interview took place on September 10, 2018. Williamson Medical Center is the county-owned hospital and provides emergency medical services for Williamson County which includes the Williamson Fire & Rescue service area. Mr. Betzold is also responsible for oversight of the medical care provided by fire departments in the county. The research questions and literature review for this project were used develop the questions asked of Mr. Betzold (see Appendix C).

The third research question was posed to identify specialized equipment that should be purchased or training that should be delivered to fire department personnel for an active shooter/mass casualty incident response. The literature review assisted in providing the answer to this question by identifying recommended best practices and industry accepted standards for personal protective equipment, pertinent medical supplies and training for the provision of medical care in and/or near unsafe environments. The interview with Mr. Betzold also provided data for this question since EMS oversees the delivery of medical care by the fire department and has already identified and purchased ballistic protection for its employees and medical supplies and equipment for patient care during an active shooter/mass casualty incident. The specifications provided by Mr. Betzold allowed the author to identify prices of applicable RTF

equipment for the purpose of formulating a budget (see Appendix G). The budget would be used to plan for purchasing and implementation.

The fourth research question inquired what response guidelines for an active shooter/mass casualty incident should be adopted by Williamson Fire & Rescue? The literature review provided a wealth of information as to what an active shooter/mass casualty response plan should consist of. The importance of cooperation and a unified response was a consistent theme of the literature. The interviews with Director Fletcher and Mr. Betzold provided insight into the actions and expectations of law enforcement and EMS during an active shooter/mass casualty response. The recent publication of NFPA 3000, the provisional standard for active shooter/hostile event response provided an industry accepted guide for developing a community-specific response plan.

A couple of limitations to the conclusions of this research project should be noted. As noted in NFPA 3000, a response plan for active shooter/mass casualty incidents should be specific to the community for which it was written. The demographics, geography, features and expectations would likely vary greatly from one community to the next. Fire departments vary greatly in size and capability across the United States. The realistic capacity for response should be considered when drafting a fire department's active shooter response plan. It should also be noted that the field of active shooter response and mitigation has evolved as the phenomenon has developed over the last 20 years. While NFPA 3000 sought to summarize the research and provide guidance to communities, its designation as a provisional standard affirmed the evolving nature of our country's efforts to mitigate this terrible problem. Future research and scholarly works may improve understanding of the problem and recommend changes in response planning.

Results

The purpose of this applied research project was to develop a plan for Williamson Fire & Rescue's response to active shooter and mass casualty incidents. Four questions were developed to give the research direction and help produce an effective standard operational guideline for the fire department to use at these events. The recent publication of NFPA 3000 provided a template for the development of an active shooter/mass casualty response plan. The document represented a summation of research and discussion on the issue and a consensus standard on best practices for response. While NFPA 3000 provided a framework for planning, many of the details were left variable since each community would have different needs and capabilities for response.

The first research question asked what target hazards exist within the Williamson Fire & Rescue service area that might be locations for an active shooter/mass casualty incident. NFPA 3000 directed fire departments and other organizations planning for an active shooter response to begin by examining the risks to their community. The risks included the consequences and target hazards. The consequences to be identified were economic and functionality impacts as well as casualties and psychological trauma (NFPA 3000, 2018). A survey of the Williamson Fire & Rescue service area was conducted using maps and a driving tour of the area streets. The survey sought to identify target hazard locations that were at risk for an active shooter or mass casualty incident.

NFPA 3000 identified four potential target types that should be considered when identifying locations threatened by active shooter/mass casualty events (NFPA 3000, 2018, Chapter 5.2.2.1).

1. Vulnerable groups of people

2. Public or private property, especially critical facilities
3. Locations with a tactical advantage for inflicting harm
4. Locations with environmental features that could cause harm

The FBI has issued several reports that compiled demographic information on active shooter/mass casualty incidents during the time period from 2000 to 2017. The results of these reports were documented in the literature review for this project. The results identified the three location types at which active shooter/mass casualty incidents have occurred during the last 18 years. The studies identified businesses, schools and open assembly areas as where these incidents have taken place historically (ALERRT Center and FBI, 2018; Blair & Schweit, 2014; Schweit, 2016).

Businesses might meet any one of the NFPA 3000 definition of target types depending on the number of people present, the location and the type of business conducted on the property. Schools met the NFPA 3000 definition of target locations as a gathering of vulnerable groups of people. Open assembly areas might also meet all four of NFPA 3000's criteria for defining target hazards depending on the specifics of the location. Houses of worship were a location type that was not a common target of active shooter/mass casualty perpetrators but was included in the location survey. These churches were included in the Williamson target hazard location survey because they meet the NFPA 3000 standard for target hazards due to the consequences of community functionality and psychological harm over damage to these religious institutions. The Williamson Fire & Rescue service area is primarily residential with multiple houses of worship serving the population. An attack by an active shooter at one of these institutions might traumatize the community and do harm to a valued institution.

The survey of at-risk locations within the Williamson Fire & Rescue service area was conducted on August 14, 2018. The survey sought to identify churches, businesses, schools and open areas of public assembly. These sites were listed and a location type assigned to each one. The sites were also assigned a district number depending on which fire district the site was located in. The survey found 22 churches, 32 businesses, 9 open public assembly areas and 4 schools (see Appendix A).

These at-risk locations types have been targeted by active shooters in the past. NFPA 3000 has directed that jurisdictions identify at-risk locations as part of the planning process. Once identified, plans for the jurisdiction should be customized for response to these types. Specific locations could also be pre-planned for active shooter/mass casualty incidents. Information on the structure, occupancy and utilities could be used to speed the mitigation process and preserve life (Hamilton, 2014). Williamson Fire & Rescue has previously preplanned for fire incidents all of the business locations in District 28. The remaining fire districts were added to Williamson Fire & Rescue's service area in July of 2018 and no preplan visits have been conducted. Inclusion of data within preplans beneficial to response for active shooter incidents for all locations in the service area would comply with NFPA 3000's directive to conduct facility risk assessments as part of the response planning process (NFPA 3000, 2018, Chapter 5.4.2).

The second research question asked what response expectations to an active shooter/mass casualty incident does law enforcement and EMS have for Williamson Fire & Rescue. In the event of an active shooter/mass casualty incident occurring within the WFR service area, the initial primary response agencies would be Williamson EMS, the Williamson County Sheriff's Office and Williamson Fire & Rescue. While other agencies would be

dispatched, these three would bear primary responsibility. NFPA 3000 directed that response planning involve multiple agencies and disciplines and include all those involved in the response (NFPA 3000, 2018, Chapter 6.2.1). A request to interview a representative of Williamson EMS and the Sheriff's Office for the purpose of coordinating and planning a response to active shooter incidents was made. The author was referred to Director Michael Fletcher with the Williamson County Schools for a law enforcement contact familiar with active shooter planning. Director Fletcher also serves with the Williamson County Sheriff's Office. Fletcher's role over school security and his past experience as a paramedic with Williamson EMS provided him with a multi-disciplinary perspective during the interview.

The interview with Director Fletcher to provide a law enforcement perspective on the role Williamson Fire & Rescue provided several facts that influenced the creation of a fire department standard operating guideline. As an identified target hazard in the community, the schools have taken several steps to reduce vulnerability to an active shooter aggressor. Access to all schools has been limited to improve student and faculty safety. In order to enter a school building, one must go through the primary entrance, show a photo identification and declare a purpose before gaining admittance. Once inside, the visitor must proceed to the school office where they can take care of their business. No one is allowed to enter the hallways unless they are part of the staff or have completed a volunteering process that included a background check (see Appendix B).

Director Fletcher explained that the school nurses have received trauma injury treatment training for active shooter incidents and have been issued a bleeding control kit but no teachers have received this training. The school resource officers in each building have received training in tourniquet application along with all Williamson County deputies. The school procedure for

an active shooter incident would be to initiate a lock-down of the facility and the school resource officer would begin to engage the aggressor and secure the scene to the best of their ability until additional deputies arrived to assist (see Appendix B).

Fletcher explained that in the past, deputies were trained to establish a perimeter to secure the scene. Once enough deputies have assembled on the scene, a group would deploy that was tasked with engaging the suspect and removing the threat. Past experience in other parts of the country has led law enforcement to change tactics according to Fletcher. Tactics now direct officers to insert themselves directly into the scene on arrival and search out the threat. The act of confronting that threat has often ended the danger to those being threatened. In order to limit casualties, deputies are taught to move toward the threat, engage it and subdue or contain it as quickly as possible (see Appendix B).

As a representative of the law enforcement agency, Fletcher was asked what the Sheriff's Office expects from the fire department on the scene of an active shooter/mass casualty incident. He responded that the municipal fire departments in the county have begun forming Rescue Task Forces that would work with law enforcement to enter a warm zone to treat and remove victims. He admitted that he did not believe any conversations had taken place regarding the place of volunteer fire departments within the county at these scenes. While the volunteer fire departments should probably participate some how with the other responders, Fletcher did not believe that capability existed at that time. He described the role of the volunteer fire responders as needing to stage at a safe location until the scene had been made safe by law enforcement. At that point, fire personnel might enter the scene to assist EMS with patient care (see Appendix B).

In the interview, Director Fletcher stated that involvement by the volunteer fire departments in the county would help with response staffing. He invited the author to attend the

next meeting and participate in the planning process for a county-wide response. The Rescue Task Force concept was described as the general plan proposed by the first meeting but he stated that the discussion had halted on the subject of Unified Command. The group had adjourned the meeting after agreeing to review the Hartford Consensus and NFPA 3000 before meeting again. While no formal agreements have been made, Fletcher described a gentleman's agreement among the representatives that all would respond in such an event until a formal plan could be created and adopted. He also mentioned the need to purchase the proper ballistic protection for responders if they would join an RTF or work in a warm zone area (see Appendix B).

The interview with Director Fletcher concluded with a discussion of active shooter response in the absence of a plan. He envisioned that response as one where the fire department would stage for law enforcement, and approach after the scene was secured. Fletcher believed that fire personnel could help with patient care in a secure area or help with a perimeter to secure the area from outside intrusion by media or citizens (see Appendix B).

A second interview was conducted with Michael Betzold, the Training Officer for Williamson EMS. As part of his duties, Mr. Betzold oversees the training and activities of Williamson Fire & Rescue emergency medical responders. The fire department is authorized to provide patient care as an extension of Williamson EMS under the medical direction of doctors at the county hospital. Mr. Betzold's role as the liaison between the fire department and EMS best qualified him to speak to the interaction needed between the fire department and EMS during the course of an active shooter/mass casualty response.

Mr. Betzold was asked to describe the preparations made by Williamson EMS for an active shooter/mass casualty incident. He described that two sets of ballistic protection had been purchased and stocked on each ambulance. The supervisor response vehicles were also equipped

with the same protective equipment. EMS purchased ballistic vest that carry Level III armor plates. This upgrade from the typical Level IIIA plates that most vest come standard with was intentional. Betzold explained that since many active shooter incidents in the recent past have involved assault rifles or other long guns, the decision was made to purchase protection that would stop those calibers of ammunition. He explained that the Level IIIA plates are only rated to stop handgun ammunition. Williamson EMS has also purchased Level IIIA protective Kevlar helmets to provide an additional degree of safety for responders (see Appendix C).

The author asked Mr. Betzold to explain the color choice give the various options available and debate on which is better. He explained that some departments choose a high visibility color such as red in the hope that a shooter would not mistake them for police wearing black tactical gear. Others, he explained, espouse the opinion that the shooter is only concerned with inflicting maximum harm and would not differentiate between police and other responders. Williamson EMS chose a royal blue color because it is commonly associated with EMS and the uniform shirts of their field personnel are also royal blue in color. Vest identifiers read EMS to identify their function within the RTF (see Appendix C).

Mr. Betzold was also asked to describe the response capability of EMS for an active shooter/mass casualty incident. He explained that on any given day, a total of 14 ambulances are available for response but that number would drop to 12 at night. All of those ambulance crew are ALS with at least one paramedic and all personnel have received the NAEMT's TECC training class to prepare them for treating wounds expected at this type of incident. Mr. Betzold explained that it was the intention of EMS to respond to these incidents with the capability to participate with law enforcement in a Rescue Task Force group to access, treat and remove patients from a hot zone to a safe location for further treatment and transport (see Appendix C).

During the interview, Mr. Betzold was asked to describe the medical supplies that EMS members would carry as part of the Rescue Task Force. He explained that a fanny pack carrier was purchased so that the RTF member could work hands free to treat patients or move them to safety without letting go of the needed medical supplies. Each member of the RTF has been provided with the same kit. Each kit contains the same equipment. This standardization was intentional, according to Betzold, so that all employees would be familiar with the supplies and be able to expect what supplies were available for their use. The kits were stocked with CAT tourniquets, an assortment of gauze and bandages, chest seals, nasopharyngeal airways, decompression needles and trauma shears. The tourniquets were for extremity wounds that threaten death from hemorrhage. The gauze and bandages were included to assist in bleeding control. The chest seals were available for torso wounds, the nasal airways were for maintaining compromised airways and the needles were for chest decompression. The trauma shears were for use in exposing injuries for treatment. All of the equipment mentioned above with the exception of the decompression needles could be used by Williamson Fire & Rescue members functioning as state-licensed Emergency Medical Responders according to Betzold. Several quantities of each of the items was included in each RTF kit so that multiple patients could be treated depending on the injuries encountered (see Appendix C; see Appendix D).

During the interview, Mr. Betzold was asked to describe the specific actions EMS responders will take during an active shooter/mass casualty incident. He explained that their units will stage far enough away from the scene for safety until they receive notification from law enforcement to move up to a safe location as determined by law enforcement. Dependent on the need, ambulance crews in the initial response would ask for additional units before deploying

as part of an RTF. These personnel would don the ballistic protection assigned to them and take the RTF medic kits into the warm zone under a protection of law enforcement (see Appendix C).

The issue of communications was also discussed during the interview. A 700-megahertz digital radio system that will serve all public safety agencies and disciplines in Williamson County was expected to be in service by the end of 2018. Betzold explained that the current system of relaying information via dispatch to either fire or law enforcement would have to continue. He understood that with the new radio system, a tactical channel would be assigned to incidents or groups that all responders would be able to access regardless of their agency. Betzold did state that a group of representatives of multiple agencies and disciplines had met to discuss active shooter response plans. He felt that this group would gain some sort of consensus on radio communications in the course of their efforts to develop a response plan (see Appendix C).

Mr. Betzold was also asked to describe what expectations Williamson EMS had for fire department response to active shooter incidents. He replied that municipal departments were working to develop the ability to deploy as RTF members. If volunteer fire departments could acquire the gear, receive the necessary medical training and participate in joint exercises, he felt that they might improve response capabilities county-wide. Betzold did question how these volunteer department responses would be accounted for since staffing numbers for response could not be predicted or guaranteed (see Appendix C).

The interview with Mr. Betzold concluded with the author asking for suggestions for how Williamson Fire & Rescue could develop a response capability to active shooter/mass casualty incidents. Mr. Betzold stated Williamson Fire & Rescue should decide what type of response it was capable of providing. If the fire department decided that it wanted to participate in a Rescue

Task Force, it would have to acquire the appropriate training and equipment. He said that Williamson EMS would offer NAMET's TECC class to fire department EMRs if requested but said that EMS could not provide the necessary ballistic protection. The fire department would have to acquire the RTF gear. Mr. Betzold encouraged participation in the committee of response stakeholders meeting to draft an active shooter response plan. He explained that grant funding for an active shooter exercise had been obtained through Homeland Security District 5 and this exercise would take place some time in 2019 after the committee had completed a response plan.

The third research question sought to identify any specialized equipment that should be purchased or training that should be delivered to fire department personnel for an active shooter/mass casualty incident response. In order to identify the proper equipment for response, the fire department must determine its capability for response (NFPA 3000, 2018, Chapter 6.2.4.1). Williamson Fire & Rescue has no plans for responding to an active shooter/mass casualty incident. The fire department has no specialized training for this type of incident nor any equipment designed specifically for these operations.

The plan must also be developed in conjunction with other agencies or disciplines that would also respond (NFPA 3000, 2018, p. 6.2.1). Williamson Fire & Rescue has not participated in any joint planning for active shooter incident response. The interviews with Michael Fletcher and Michael Betzold revealed that planning for a county-wide response to active shooter incidents had begun but no plan had yet been produced (see Appendix B; see Appendix C). Williamson EMS has acquired protective gear for its personnel and medical supply kits designed for use by Rescue Task Force members (see Appendix D). It has also formulated a plan within the organization for assembling an RTF with a law enforcement

component to provide protection. This plan has not been coordinated with law enforcement or exercised (see Appendix C).

The authority for Williamson Fire & Rescue to provide medical care is provided through Williamson EMS. That provision of care is directly supervised by Williamson EMS. NFPA 300 called for a coordination of effort and planning by the agencies involved (NFPA 3000, 2018, Chapter 6.2.1). The fire department should collaborate with EMS to provide a safe and efficient response (Hamilton, 2014). Williamson EMS has provided training to personnel on patient care using TECC guidelines. EMS has also adopted an RTF model to expedite patient care and extraction from danger (see Appendix C).

The needs assessment called for by NFPA 3000 identified that the fire department does not have the capability (equipment or training) to participate in a Rescue Task Force with EMS (NFPA 3000, 2018, Chapter 6.2.2). The response plan must also take into consideration gaps between the response standard and current capabilities. The capabilities needed to bridge the gaps should also be identified (NFPA 3000, 2018, Chapter 6.2.4.1). Williamson Fire & Rescue cannot participate at present in an RTF concept as part of a multi-agency active shooter response. The fire department must acquire ballistic protective gear, medical equipment for use in an RTF and TECC training. The ballistic protective gear was described by NFPA 3000 as part of personal protective gear. For participation in an RTF, NFPA 3000 called for a minimum Level IIIA ballistic vest, ballistic helmet, flash light, medical gloves, medical kit for patient treatment and a radio with remote microphone and earpiece (NFPA 3000, 2018, Chapter 14.3). Adoption of this gear complement for each member of an RTF would also coordinate with Williamson EMS which would also be providing personnel for an RTF (see Appendix C).

The fourth research question asked what response guidelines for an active shooter/mass casualty incident should be adopted by Williamson Fire & Rescue. The answer to this question was developed from information gleaned from the interviews and the literature review. The recently published NFPA 3000, as the provisional standard for development of an active shooter/hostile event program, represented a consensus for best practices. To an extent, NFPA also could be considered as summation of the research and theory up to this point on response to active shooter incidents. The standard offered guidelines for the development of an active shooter response but recognized that the needs and capabilities of each community would be unique. The details of response were left open to interpretation based on those unique capabilities.

The guide for program development provided by NFPA 3000 was used to develop a Standard Operating Guideline (SOG) for Williamson Fire & Rescue. The interviews were relied upon to help develop the details of what the fire department was capable of providing and the expectations of the other primary response agencies. The research process determined that a gap existed between what response Williamson Fire & Rescue was capable of providing at present and what response the fire department needed to provide. An SOG was created to guide the fire department's response based on current capabilities. Based on what the planning process identified as what the response should be, a secondary draft SOG was created that Williamson Fire & Rescue could adopt once its capabilities meet the proposed standard for community response. While still in development through the work of the county-wide active shooter response committee, a basic conceptualization of what the response should consist of has been formulated by the major disciplines. An understanding of this basic conceptualization was provided by the Betzold and Fletcher interviews. The draft response plan reflects the current

expectations of law enforcement and EMS with which the fire department would respond. The Rescue Task Force concept has been adopted by EMS and recognized by law enforcement (see Appendix C). As an extension of EMS in the provision of medical care, Williamson Fire & Rescue should follow their lead in adoption of the RTF (Hamilton, 2014). The draft version of the SOG reflects this adoption but recognizes that the fire department lacks the training and equipment to perform this function at present. This draft would likely see further revisions since the committee of response agencies and disciplines within Williamson County has not completed a response plan. In order to achieve the cooperation called for by NFPA 3000, the final SOG must reflect the work of that committee to create a common response plan.

A Standard Operational Guideline for Williamson Fire & Rescue was created to guide the fire department on how to response in the event of an active shooter/mass casualty incident. The guideline was created based on the research project's literature review and the interviews conducted with representatives of the two other primary response disciplines. A study was also conducted to catalog the potential active shooter/mass casualty target locations within the service area. The location types for this study were determined by incident statistics discovered during the literature review. This study was incorporated into the response guideline. Research was also conducted to identify the proper training and specific equipment necessary for this specialized response.

The active shooter guideline created for immediate adoption by Williamson Fire & Rescue was designed based on current capabilities. The guideline began with a purpose statement. A list of definitions for terminology used to describe incident response was added. These definitions were created as part of the provisional NFPA 3000 standard (NFPA 3000, 2018, Chapter 3).

A set of priorities for fire department personnel were defined for the guideline as directed by NFPA 3000 (NFPA 3000, 2018, Chapter 6.4.1). These priorities were firefighter safety, life safety, incident stabilization and property conservation. These priorities reflect the goals described in NFPA 3000's chapter on incident management (NFPA 3000, 2018, Chapter 8). A risk assessment was conducted as advised by Chapter 5 of NFPA 3000. This assessment was designed to identify threat locations with the goal of preventing the event or minimizing the impacts. The guideline identified four major location types using studies of past events (ALERRT Center and FBI, 2018; Blair & Schweit, 2014; Schweit, 2016). Williamson Fire & Rescue has conducted pre-fire planning visits to businesses, schools and some churches and assembly areas as part of prevention and mitigation activities. Based on the recommendations of NFPA 3000, the Williamson guideline directed personnel to consider active shooter scenarios when preplanning these location types (NFPA 3000, 2018, Chapter 5.4.2).

Coordination with other agencies and disciplines was directed by the Williamson SOG. This reflects the subordinate relationship that the fire department has with EMS in regards to patient care (see Appendix C). The SOG directed fire personnel to stage and await direction from law enforcement on when and where to approach the scene based on the expectation that they will move to subdued or contained the threat (see Appendix B). A set of control zones defined by NFPA 3000 was included in the SOG. These zones are expected to be defined by law enforcement as they are the only discipline that has the training and equipment to move between all zones. The zones were described in the procedures section of the SOG and taken from the recommendations of NFPA 3000 (NFPA 3000, 2018, Chapter 13.3).

The initial procedures of the SOG require fire department personnel to approach the scene using marked department apparatus to identify their purpose to law enforcement on the

scene. Fire personnel were also directed to remove themselves from the scene if they find themselves under threat as described by NFPA 3000 (NFPA 3000, 2018, Chapter 13). Williamson Fire & Rescue was directed by NFPA 3000 to ensure adequate resources for incident response and mitigation were available (NFPA 3000, 2018, Chapter 7). The Williamson SOG addressed this issue by encouraging situational awareness and proactive requests for mutual aid response. A recommendation for a specific mutual aid response assignment from the neighboring municipal fire departments was included. The SOG also reminded fire personnel to consider the number of ambulances for transporting patients when requesting mutual aid early in the incident.

NFPA 3000 directed that a response plan be created base on the organization's resources and capabilities (NFPA 3000, 2018, Chapter 6.2). The current capabilities of Williamson Fire & Rescue do not permit personnel to operate on the Warm Zone or Hot Zone as described by NFPA 3000. Personnel do not have the TECC training for the provision of threat-based care nor the ballistic gear for personal protection described in the NFPA 3000 competencies (NFPA 3000, 2018, Chapter 13.2; NFPA 3000, 2018, Chapter 13.4). The fire department does have the capability to participate in the Unified Command described by NFPA 3000 (NFPA 3000, 2018, Chapter 8). Fire personnel that possess recognized medical provider certifications may also operate in the Cold Zone described by NFPA 3000 to assist with victim treatment and facilitate transport to definitive care at a hospital (NFPA 3000, 2018, Chapter 13.3.3).

A secondary standard operating guideline was created based on the expectations of law enforcement, EMS and the initial planning created by the county-wide active shooter response committee. The draft SOG represents the minimal response standards established by EMS and law enforcement for fire department participation in a multi-agency and multi-disciplinary

response. This process was described in NFPA 3000 (NFPA 3000, 2018, Chapter 6.2.4.1). Coordination between agencies was prescribed for planning and response by NFPA 3000 (NFPA 3000, 2018, Chapter 6.2.5).

The draft guideline also began with a purpose statement and a list of definitions important to facilitate communications between agencies and disciplines. These definitions were created as part of the provisional NFPA 3000 standard (NFPA 3000, 2018, Chapter 3). The same response priorities for fire department personnel were defined for the guideline as directed by NFPA 3000 (NFPA 3000, 2018, Chapter 6.4.1). These priorities were firefighter safety, life safety, incident stabilization and property conservation. These priorities reflect the goals described in NFPA 3000's chapter on incident management (NFPA 3000, 2018, Chapter 8). A risk assessment was conducted during the plan as advised by Chapter 5 of NFPA 3000. This assessment was designed to identify threat locations with the goal of preventing the event or minimizing the impacts. The guideline identified four major location types using studies of past events (ALERRT Center and FBI, 2018; Blair & Schweit, 2014; Schweit, 2016). Williamson Fire & Rescue has conducted pre-fire planning visits to businesses, schools and some churches and assembly areas as part of prevention and mitigation activities. Based on the recommendations of NFPA 3000, the Williamson guideline directed personnel to consider active shooter scenarios when preplanning these location types (NFPA 3000, 2018, Chapter 5.4.2).

The draft SOG was also written to recognize the subordinate role of Williamson Fire & Rescue to Williamson EMS in regards to the provision of patient care. The role of law enforcement in subduing and containing the threats associated with an active shooter incident were also noted in the draft SOG as well as the important task of defining the geographic control zones for operations based on the definitions provided by NFPA 3000 (NFPA 3000, 2018,

Chapter 13). Fire personnel were also reminded in the OPG to take reasonable efforts to preserve evidence while operating in a crime scene (NFPA 3000, 2018, Chapter 8.6.2).

The procedures section of the draft OPG differed greatly from the OPG written to reflect present department capabilities. This draft OPG reflected the capabilities the fire department must acquire in order to meet the expectations and be able to respond with the primary agencies and disciplines in the county. A set of competencies for fire department personnel was enumerated. These expectations must be met by fire personnel before they become part of an active shooter response. These competencies were taken from the provisional NFPA 3000 standard (NFPA 3000, 2018, Chapter 13.4.1.2).

The answer to the first research question created a catalog of the potential active shooter/mass casualty target locations within the service area. The location types for this study were determined by incident statistics discovered during the literature review. This study was incorporated into the response guideline by the creation of two location types. Specific locations within the Williamson Fire & Rescue service are would be assigned a type based upon specific criteria using NFPA 3000 as a model (NFPA 3000, 2018, Chapter 5; NFPA 3000, 2018, Annex A.5.2.2). The primary distinction between Type 1 locations and Type 2 locations was the quantity of potential victim's present. Type 1 locations were likely to have greater than 25 people present, Type 2 locations would have fewer than 25. Each type was assigned a response configuration as expected by NFPA 3000's chapter on resource management (NFPA 3000, 2018, Chapter 7). The Emergency Communications Operations Center (ECOM) would dispatch a standard initial alarm response to reported active shooter incidents based on that location's type. The location type should be predetermined during a fire department preplan visit.

The initial alarm response to each location type relied on a mixture of fire and EMS personnel to provide triage, threat-based care and transport to definitive care. The response also provided a mix of career and volunteer fire personnel. Williamson County has four career fire departments serving municipalities within the county. The unincorporated parts of the county are protected by four separate volunteer fire departments. The volunteer fire departments cannot provide a guaranteed staffing response at any given time. The reliance on an automatic aid response from a career fire department would supplement an unknown quantity of volunteer firefighters. The Type 1 locations would prompt two career department responses to incidents at those locations due to the larger number of potential victims.

The procedures section of the OPG was written to provide a set of guiding principles for the Unified Command to follow. This concept meets the expectation of NFPA 3000 for the establishment of common goals by the Unified Command (NFPA 3000, 2018, Chapter 8.2.3.2). The zones described by NFPA 3000 were incorporated into the Williamson OPG. These zones were defined in terms of designating levels of safety expectations for responders. These zones were also used to define the training and personal protective equipment that fire department personnel should possess in order to operate within. The training competencies and degrees of protective gear were based on Chapter 13 of NFPA 3000. The level of ballistic protection adopted was greater than expected by NFPA 3000 but met the standard adopted by Williamson EMS for its personnel (see Appendix C).

The adoption of a Rescue Task Force concept as part of the response plan was not required by NFPA 3000 which allowed for a variable response based on community needs and capabilities. The Rescue Task Force has been advocated by many since 2013 as a proactive method of accelerating the process of accessing, treating and extracting patients from dangerous

environments and speeding transport to a hospital (Hamilton, 2014). The RTF concept attempts to achieve the goals of the Hartford Consensus to increase victim survival chances (Hamilton, 2014). Williamson EMS has adopted that concept, purchased the necessary medical equipment and ballistic protection and provided TECC based training to its personnel. As a medical care provider authorized by Williamson EMS, Williamson Fire & Rescue should coordinate its response with EMS to follow the intent of NFPA 3000 (NFPA 3000, 2018, Chapter 6.2.5). The goals of the RTF as described by NFPA 3000 were incorporated into the draft Williamson SOG. The role of team leader for the RTF was assigned to law enforcement as the part of the team ultimately responsible for the safety of the RTF.

The draft Williamson SOG also included a section on the transition from response to recovery. NFPA 3000 went into great detail in describing that transition but relatively small volunteer fire departments with limited staffing and resources cannot meet those expectations. Larger organizations with adequate resources must assume the responsibility for extended recovery periods described in NFPA 3000 (NFPA 3000, 2018, Chapter 20). The draft Williamson SOG deferred responsibility for recovery operations to the county's EMA. Within Williamson County, the EMA has the staffing and experience to lead the efforts described by the provisional standard.

Discussion

The goal of this action research project was to develop a plan for Williamson Fire & Rescue to respond to active shooter/mass casualty incident within its service area. A literature review was undertaken to discover and document past and present research in the topic. Several research questions were formulated to guide the project toward its ultimate goal of producing a standard operating guideline for the fire department.

The literature review found a progressive body of scholarly research and discussion produced by a wide range of participants struggling to come to terms with an expanding phenomenon that has physically and emotionally terrorized society during the last 20 years. The recent publication of NFPA 3000 was found to be a summation of research to-date and a consensus of subject matter experts for best practices for fire departments and other relevant agencies that seek to develop a response plan for active shooter/mass casualty incidents. By labeling NFPA 3000 as a provisional standard, the authors and publisher conceded that research and discussion on this topic has not reached a culmination that has produced a definitive planning document (NFPA 3000, 2018). The statements issued by the Hartford Consensus have focused the attention of those drafting response plans on the need to integrate multiple agencies into the response and preserve life by controlling hemorrhage in the field (Jacobs et al., 2013).

One of the key components of planning recommended by NFPA 3000 was identifying at-risk locations. These locations should be identified in order to aid in prevention and/or incident mitigation (NFPA 3000, 2018, Chapter 5). During the research process, a survey was conducted to identify at-risk locations. Criteria for defining these locations was obtained from NFPA 3000 and FBI statistics on historical active shooter incidents. The survey of at-risk locations revealed many more potential sites than expected (see Appendix A). The fire department has conducted pre-fire planning in the past but has not considered active shooter scenarios when preplanning nor included all the locations identified in the survey.

During the process to create an active shooter/mass casualty incident response plan, the author discovered problems with adequate staffing for these incidents. One issue was the expectations for casualties. While the creation of location types based on facility size and potential occupancy numbers aided in formulating a response, a variety of factors will make it

difficult to predict the number of victims that will need medical treatment and transport. Also related to this response staffing delimma was the reliance on volunteers by the fire department. The available volunteer personnel at any given point in time is an unknown quantity. The solution settled on by the author while drafting the response plan was to expect four personnel from each volunteer station dispatched. The actual response from each volunteer station is unpredictable. One station might have no ne available at the time of the call while another might deliver 12 personnel to that scene. An attempt to address this problem in the guideline was made by dispatching multiple volunteer station and relying on an average of 4 personnel from each station dispatched. The reliance on automatic-aid from neighboring career departments was also used to ensure adequate staffing to active shooter incidents.

The decision to implement a Rescue Task Force was not taken lightly while drafting the response plan. The response plan must realistically reflect the capabilities of the fire department (NFPA 3000, 2018, Chapter 6.2). Williamson Fire & Rescue does not have the TECC training necessary to provide threat-based care nor the ballistic protective gear necessary to provide a measure of safety to its responders. However, the need to plan in conjunction with other responder agencies and disciplines requires the fire department to bridge the gap between current capability and needed capability (Hamilton, 2014). The author proposed two standard operating procedure documents to accomplish this need. The first document was implemented immediately to provide a response plan based on present capability. The second response plan reflects the capabilities that must be acquired before implementation.

The adoption of the Rescue Task Force concept into the second draft response plan was necessary because Williamson EMS has already incorporated the concept into its response configuration. EMS has provided training and equipment to its own personnel. As an extension

of Williamson EMS for the purposes of providing medical care, Williamson Fire & Rescue should adopt the same response concepts as recommended by NFPA 3000 (NFPA 3000, 2018, Chapter 6.2.1). As the originator of the RTF concept, Arlington County Fire Department found they could improve patient stabilization times for a 44-patient scenario from two hours and five minutes to 30 minutes when employing RTFs (Chino Valley Fire Training, 2014). The Hartford Consensus goal of early hemorrhage control to improve survival rates should be achieved by improving the interoperability between fire/EMS and law enforcement (Jacobs et al., 2013). The Rescue Task Force has been adopted as a means to that end. A secondary reason for adopting the Rescue Task Force concept by the fire department was the transportation of patients from the scene. At present, EMS personnel would be called upon to staff the RTF. If those EMS personnel are drawn into the scene for victim care and extraction, a bottleneck of patients is likely to occur at Casualty Collection Points or the Treatment Area as patients await transportation to definitive care. Fire department personnel are best suited for staffing the RTF so that EMS personnel can remain available for transport.

Incorporating the Rescue Task Force into the fire department response plan will also be costly. Based on the equipment configuration adopted by Williamson EMS, a budget for acquiring the necessary equipment was built as part of a cost analysis (see Appendix D). A configuration of providing equipment for a single two-person RTF component from each station was adopted. Each RTF member would be provided a ballistic vest, helmet and supplied medical kit attached to the ballistic vest. A set of four victim litters and a medical supply backpack with additional quantities of bleeding control equipment for use at a Casualty Collection Point was also budgeted. The per station cost of this equipment was $4,184.00. Equipping all four Williamson Fire & Rescue stations with a set of RTF response gear would

cost $16,736.00 (see Appendix G). This cost represented the amount needed to equip only a portion of the fire districts in Williamson County. The implementation of a county-wide response concept recommended by NFPA 3000 would require much greater investment. The necessary TECC training for providing threat-based care as part of the RTF would be delivered by Williamson EMS to the fire department personnel at no cost to the fire department. Despite procuring the training at no cost, acquisition of the equipment would be difficult for a volunteer fire department that relies on donations for funding. The necessary TECC training for providing medical care appropriate at active shooter/mass casualty incidents would not have a financial cost but would require additional time commitments from volunteers that will need to attend the 16-hour course.

The results of this research project identified that an active shooter/mass casualty incident response plan must be realistic and implementable based on the capabilities of the fire department. A standard operating guideline for responses to active shooter incidents by Williamson Fire & Rescue based upon its present capabilities. A gap was identified between that present capability and what the other primary response agencies and disciplines expect from the fire department in order for it to participate within the framework of response that will operate on the scene of an active shooter incident in the service area. A secondary draft for a standard operating guideline was also created that reflects what the fire department capabilities need to be. That draft version cannot be implemented until the proper training and equipment can be obtained. The draft version should not be implemented until the study committee composed of the various agencies and disciplines that would respond to an active shooter incident within Williamson County completes the work of a multi-agency response plan. The draft OPG written for Williamson Fire & Rescue reflects the basic response expectations of law enforcement and

EMS. It also deals primarily with response procedures. Williamson Fire & Rescue does not have the capability to manage a recovery period. Other agencies within the county would assume those responsibilities.

The completion of an implementable active shooter response plan provides a short-term solution for Williamson Fire & Rescue. The drafting of a secondary proposed response guideline provides goals for the department to work towards. The draft version and the research that was conducted to formulate the draft plan might also benefit the multi-disciplinary study committee working to formulate a county-wide plan. Initial meetings to form the study committee did not have participation from volunteer fire departments in the county. A realistic multi-agency response plan must include the fire departments that protect the unincorporated portions of the county. EMS does not have the personnel to staff a Rescue Task Force and transport multiple patients to the hospital for definitive care. The career fire departments in the county will have extended travel times to reach much of the unincorporated areas. These career department will be critical to a successful active shooter incident mitigation but cannot be relied upon solely. The key to minimizing delayed responses to active shooter scenes by neighboring jurisdictions and other distant resources is the incorporation of pre-determined automatic-aid protocols into the planning and dispatch process (Hick et al., 2016).

Recommendations:

The occurrence of an active shooter/mass casualty incident within the Williamson Fire & Rescue service area would inflict death and injury to citizens. These incidents could potentially damage community infrastructure and would do irreparable harm to the social fabric of the community. The fire departments mission to prevent, respond to and mitigate harm to the

community includes active shooter incidents. Williamson Fire & Rescue must prepare to respond to the unique challenges posed by these incidents while providing for responder safety.

Prevention and mitigation of active shooter/mass casualty incidents should begin with target location preplanning. The present system of pre-fire planning should be adapted by Williamson Fire & Rescue to include data helpful during an active shooter response. The potential target locations identified in the survey should all be visited to collect this data. Documents available on the internet could be provided to owners or managers of businesses and churches proactively guiding them to prepare for the possibility of an active shooter incident at their location. These might aid in prevention and also educate them on cooperating with emergency responders.

The standard operating guideline (SOG 4.16) provides a response plan that reflects the present capabilities but does not meet the expectations of other agencies with which the fire department shall respond with to active shooter/mass casualty incidents. The draft version created by this research project fits within the response framework intentions of those agencies but does not reflect the present capabilities of the fire department.

Williamson Fire & Rescue must find a source for the nearly $20,000.00 needed to properly equip fire department personnel for participation in a Rescue Task Force. At present, the operating budget will not support the purchase of the needed equipment. This equipment might be purchased through a request for funding from Williamson County government or from community donations solicited for that purpose. The county budgetary process for the physical year starting July 2019 will begin in December 2018. This timetable allows for a request to fund the response equipment.

Training on the proper delivery of patient care in an active shooter/mass casualty environment was also identified as having a gap between present capabilities and needed competencies. The NAMET's TECC course was recommended by NFPA 3000 as an adequate system of care for victims. Williamson EMS has provided this instruction to its personnel and is willing to deliver it to Williamson Fire & Rescue personnel. The fire department should schedule this training as soon as practical.

This research project was completed before the multi-agency study committee working within Williamson County completed a joint response plan for active shooter/mass casualty incidents. The draft version of the response plan should be submitted to future meetings of the study group for consideration as it formulates a county-wide plan. The completed work product of the study committee should be incorporated into the final Williamson Fire & Rescue response guideline. A coordinated multi-agency and multi-disciplinary response plan is the foundation of the recommendations of NFPA 3000 and was consistently echoed by the other research discovered during the literature review.

Williamson Fire & Rescue must close the gaps in capability in order to participate effectively in a response to an active shooter/mass casualty incident. The county-wide study committee working to formulate a multi-agency response plan will probably take several months to complete the process. Additional time will be required for all participating agencies to acquire the equipment and training necessary to complete their assignments. This will allow the fire department to train personnel and purchase equipment. A joint exercise drill should also be planned by the study committee to allow all of the participating agencies to test the response plan. It is also recommended that Williamson Fire & Rescue participate in the exercise to judge

the level of preparedness and improve its ability to safely mitigate the hazards associated with an active shooter/mass casualty incident.

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Appendix A: Williamson Fire & Rescue Service Area Target Hazard Locations by Type and Fire District

Total: 67

Churches- 22
Businesses- 32
Schools- 4
Public Assembly- 9

Location	Type	Dist.15	Dist.17	Dist.18	Dist.28
St. Ignatius Orthodox Church	Church				X
Ivan Creek Club House	Assembly				X
Peytonsville Church of Christ	Church				X
Glenns Grocery	Business				X
LTE Equipment	Business				X
Bruce Auto Repair	Business				X
Westwood Community Church	Church				X
Millview Community Club	Assembly				X
Epworth United Methodist church	Church				X
Page Middle School	School				X
Page High School	School				X
Milcrofton Utility	Business				X
Black Dog Market	Business				X
Arno Storage	Business				X
The Grove Manor House	Assembly				X
Rock-N-Country Veterinary	Business				X
Hatcher Family Dairy	Business				X
Wesley Chapel United Methodist	Church				X
Second Nature Lawn Care	Business				X
Peytonsville Baptist Church	Church				X
Mower Genius Lawn Repair	Business				X
Exxon Station	Business				X
Graystone Quarry	Assembly				X
Jackle Center	Assembly				X
Locust Ridge Baptist Church	Church				X
Beech Grove United Methodist	Church	X			
Allisona Church of Christ	Church	X			
Harpeth Lick Church	Church	X			
Rigsby Brothers Garage	Business			X	
Riggs Chapel	Church	X			
Flat Creek Community Club	Assembly	X			
Edwards Grove Church	Church	X			
Bethesda Presbyterian Church	Church		X		
Bethesda Market & Deli	Business		X		
Bethesda Elementary	School		X		
Bethesda Public Library	Assembly		X		
Bethesda Park and Rec. Center	Assembly		X		
B & D Market	Business		X		

Creekside Stables	Business		X		
Mt. Carmel Presbyterian	Church		X		
Glenn Chapel	Church		X		
Cool Springs Missionary Baptist	Church		X		
Bethesda United Methodist	Church		X		
Riverbend Nurseries	Business		X		
Allisona Chapel	Church			X	
College Grove Baptist	Church			X	
U.S. Bank	Business			X	
Hot Rods & Threads	Business			X	
Sip-n-Scoop	Business			X	
Hair Station	Business			X	
College Grove Community Center	Assembly			X	
College Grove United Methodist	Church			X	
Harpeth Scholastic	Business			X	
Cartcon1 Airsoft	Business			X	
Bonnies Barnyard	Business			X	
Hummerick Construction	Business			X	
Country Market & Deli	Business			X	
TFS Foundations	Business			X	
Steve's Auto Repair	Business			X	
Split Peas	Business			X	
Auto America	Business			X	
Mt. Pleasant Missionary Baptist	Church			X	
Antique Interiors	Business			X	
College Grove Elementary	School			X	
Furniture Medic	business				X
Owl Hollow Gun Club	business		X		
Cool Springs Primitive Baptist	Church				X

Appendix B: Interview with Michael Fletcher

September 7, 2018

Questions for Michael Fletcher's interview:

1. What is your role with the Williamson County School System?

a. Director of School Security, responsible for 47 schools with a student population of almost 41,000 students.

2. What duties does your job entail?

a. The safety and security of students, faculty and staff. Also directs the policy and procedures for facility security. Position also involves day-to-day supervision and coordination of school resource officers detached from the Williamson County Sheriff's Office.

3. Describe your background and how it relates to your position?

a. Worked for Williamson EMS as a paramedic. Also worked for the Williamson County Sheriff's Office, still a reserve deputy. Background in EMS and law enforcement provided knowledge and experience for job overseeing school security.

4. Describe the preparations for an active shooter/mass casualty incident that the school system has made.

a. The school system has hardened the facilities by improving locks, installing cameras and intercoms at primary entrances. Visitors are admitted into the office where they must declare their purpose. No one is allowed to enter the hallways without being vetted and escorted. Also teaching and practicing lock down procedures at all schools. Visitors must now show identification before admittance. Each school has at least one resource officer.

5. Do schools have any capability to provide medical care to victims in the event of an active shooter scenario?

a. Each school has a nurse assigned. Nurses received training this past year in traumatic injury treatment from active shooter type incidents. The nurse in each school has been issued a medical kit that has tourniquets and bandages for use it these events. School resource officers also receive training through the Sheriff's Office on the use of a tourniquet.

6. What is law enforcement's plan for active shooter events?

a. Our deputies and school resource officers are trained to deploy on arrival at the scene and immediately confront the aggressor. Plan the same for schools or whatever location. They will continue to move to isolate and stop the threat until the situation is resolved. The plan has changed over time. Several years ago, a perimeter would have been set up and a force assembled

to move in to confront the aggressor. Active shooter incidents in other place showed that lives were being lost during this delay to assemble a force. Deputies are too spread out across the county to assemble in force quickly. Studies have also shown that many of the perpetrators will surrender or kill themselves when confronted by law enforcement. The important thing is to stop the aggressor's ability to harm others as fast as possible.

7. What expectations for a fire department response does the Williamson County Sheriff's Office have in the event of an active shooter/mass casualty incident?

a. Depends on where you are talking about. The fire departments for the cities of Brentwood and Franklin have trained with EMS to provide a Rescue Task Force response that will enter with the city police officers and treat and remove patients. Believes EMS is going to purchase body armor and medical kits to protect employees and provide treatment to patients. The towns of Nolensville, Fairview and Spring Hill do not have a fire department Rescue Task Force yet. Doesn't know of any volunteer fire department capability. The Sheriff's Office will move to stop the aggressor and secure the scene. Once the scene is safe, fire and EMS will be allowed to enter and treat and remove patients.

8. How will deputies from the Sheriff's Office work with EMS and firefighters who are in the Rescue Task Force?

a. The details of that have not been worked out yet. A meeting was recently held to discuss how that response will work. As far as on scene, the Rescue Task Force will be escorted and protected by a law enforcement contingent formed for that purpose. Who is on the RTF is still being figured out. A gentleman's agreement has been made for now that all the fire departments, EMS and all the law enforcement agencies will work together and respond to wherever in the county an active shooter incident happens. The group of representatives that has met will meet again in October and begin to plan a formal response plan. NFPA 3000 and the Hartford Consensus were given out as homework reading at the last meeting so that all the representatives can get on the same page.

9. Are any of the volunteer fire departments participating in these meetings?

a. No, none were present. Thinks that it would be good for the volunteer departments to participate since many of the schools are in volunteer fire districts rather that inside the city limits.

10. Williamson Fire & Rescue does not have a response plan for active shooter events. What suggestions do you have for how the fire department can develop a response capability?

a. Not sure how a volunteer fire department response can be used since the response isn't guaranteed as far as numbers of responders and level of training. Volunteer departments must have the correct training and gear to participate in a Rescue Task Force. Right now, volunteers probably used to aid in patient care in secure areas before transport. Firefighters might be able to help with crowd control or perimeter security too. Fire department should participate in the

active shooter response plan group meeting. Deputies have good working relationship with volunteers from experience with calls like wrecks but law enforcement has trained for these types of incidents with the city fire departments and EMS. Volunteer fire departments ought to get the right gear and training if they want to participate in a Rescue Task Force.

Appendix C: Interview with Michael Betzold

September 10, 2018

Questions for Michael Betzold's interview:

1. What is your role with the Williamson County EMS?

a. He is the Training Officer. Job is to develop and provide continuing education and training for Williamson EMS employees, coordinate with EMS officers in the municipal fire departments and supervises those volunteer firefighters in the county who act as Emergency Medical Responders under the medical direction of the hospital.

2. What duties does your job entail?

a. Also programs and oversees the initial training to prepare volunteer firefighters seeking to gain State of Tennessee licensure as an Emergency Medical Responder. EMRs also required to pass an annual skills check-off and complete on-line continuing education training. EMS also delivers CPR recertification classes at the volunteer fire departments annually.

3. Describe the preparations for an active shooter/mass casualty incident that Williamson EMS has made.

a. Williamson EMS has purchased enough ballistic protection gear to put two sets on each ambulance as well as the supervisor trucks. Training was also delivered in-house using the NAEMT Tactical Emergency Casualty Care class. Williamson EMS has also provided this training to Franklin firefighters and Brentwood firefighters. Prepared to use the protective gear and training to take part in a Rescue Task Force at these incidents.

4. What is the average daily response capability for Williamson EMS to an active shooter/mass casualty incident?

a. Operating 12 ALS ambulances crewed by two personnel that work a 24-hour shift. Also have 2 12-hour workload trucks also staffed with a 2-person ALS crew. These both operate during the daytime.

5. Describe the ballistic personal protective gear that EMS has purchased?

a. The plate carrier vests purchased were equipped with Level III armor plates. The vests also have side carriers that each hold a 6"x6" plate. The total cost for one set of the plates and a carrier vest was about $1,100.00. Also purchased a Level III Kevlar helmet. Many of the ballistic vests they looked at provided only Level III plates. Decision was made that since many of these active shooter incidents across the nation involved rifles as a weapon, the Level III protection was not enough. Level IIIA gives a measure of protection against some rifle rounds.

6. Most advocates of the Rescue Task Force concept make specific recommendations about the medical supplies that should be carried by the fire/rescue members. What supplies and equipment has EMS purchased for RTF use?

a. We followed pretty closely with what is recommended by the TECC guidelines. Purchased a fanny pack type case that can be buckled around the waist. This was done so that members could keep hands free to apply aid or carry patients to safety. The kits were stocked with CAT tourniquets, several different sizes of bandages or gauze, chest seals, nasopharyngeal airways, decompression needles and a pair of trauma shears.

7. Some debate exists on the color and labeling of the ballistic protection. What has Williamson EMS chosen to use?

a. Decided to go with a royal blue color for our vest because that is the color of the uniform shirts our crews wear. The identifier label says EMS. The Kevlar helmets are black and our medical packs are hi-vis orange.

8. If the EMS crews are used to staff a Rescue Task Force, how will transporting patients be accomplished?

a. We will dispatch as many ambulance units as is necessary depending on the number of patients. We will rely on fire/rescue members to assist with staffing the RTF and keep enough employees available to drive the units. Also may need to rely on mutual aid units from out of the county.

9. What is EMS's plan for active shooter events?

a. Our ambulances will stage away from the location on arrival until notified via dispatch that law enforcement has declared a safe area close to the incident. We will move to that safe area and link up with police. If needed, our employees will use their RTF gear and move to treat and remove patients to a safe location for transport. EMS crews doing RTF have to have police escort into warm zone-type areas.

10. How will EMS communicate with law enforcement and fire on the scene?

a. Until new radio system is up and running, will have to relay information through dispatch. After new system, a tactical channel could be assigned that all the players could move to. There is a group of representatives from multiple agencies across the county that has begun to meet to plan a common response for active shooter. This group should establish that policy.

11. What expectations for a fire department response does Williamson EMS have in the event of an active shooter/mass casualty incident?

a. Right now, the city departments have had TECC training and could help with a RTF if they have the ballistic gear. The volunteer departments don't have gear or training and have to stay in cold zone. If volunteer fire departments are willing to purchase the correct ballistic protection

and take the necessary TECC training, they could participate in RTF. May be problems with staffing since volunteer's availability hard to guarantee. County-wide concept in the works would help with that problem.

12. Williamson Fire & Rescue does not have a response plan for active shooter events. What suggestions do you have for how the fire department can develop a response capability?

a. If the department wants to participate in a RTF, EMS can provide the TECC training to WFR. Would have to purchase the ballistic protective gear for the fire department. Participating in the active shooter response committee that has just started working would be a great way to plug in. Your plan would need to consider where you stage, who can go and how you fit into RTF or helping treat patients in the cold zone. Better if the gear and equipment is similar across the county so interoperability is possible. Volunteer departments also need to participate in training exercises. One later this year but not scheduled yet.

Appendix D: Williamson EMS Rescue Task Force Equipment

QTY	ITEM
6	CAT Tourniquets
4	HALO Chest Seals
50	4X4 Gauze
2	ARS Needles (14 ga X3.25")
6	6" Elastic Bandages
4	Quick Clot Bandages
1	3" Surgical Tape
9	Assorted Nasal Airways
1	Pair Trauma Shears
2	Surgilube

Appendix E: Williamson Fire & Rescue Active Shooter SOG

Williamson Fire & Rescue

Standard Operational Guidelines

Subject: Active Shooter/Mass Casualty Response

SOG # 4.16 **Issue Date:** October 5, 2018

Purpose

Williamson Fire & Rescue has established this guideline to aid in active shooter/mass casualty operations. These following guidelines establish the response protocol and incident command structure to successfully mitigate this type of emergency.

Definitions

Active Shooter- One or more individuals actively engaged in harming, killing, or attempting to kill people in a populated area with the use of firearm(s).
Ambulance Exchange Point- A geographical location where transport vehicles are available to transport casualties.
Ballistic Protective Equipment- An item of personal protective equipment intended to protect the wearer from threats that could include ballistic threats, stabbing, fragmentation or blunt force trauma.
Casualty Collection Point- A temporary location used for the gathering, triage, medical stabilization and subsequent evacuation of nearby casualties. May be used where vehicular access might be limited and is usually occurring in the warm zone.
Community Resiliency Center- A place of healing a support dedicated to serving as a resource and referral center for residents, visitors and responders affected by an active shooter/mass casualty incident. A CRC will also provide ongoing services and assistance to victims, family members, first responders and community members.
Emergency Communications Center (ECOM)- The physical location at which the coordination of information and resources to support incident management (on-scene operations) activities normally takes place.
Evacuation Corridor- A pathway secured by law enforcement for the purpose of accessing and removing victims.
Force Protection Group- Law enforcement officers (two or more) assigned to a Rescue Task Force for the purpose of protecting EMS or firefighters
Incident Command Post- A location (usually in the COLD ZONE) used by the Incident Commander or Unified Command for the purpose of command and control.
Joint Information Center- A location used to coordinate critical emergency information, crisis communications and public affairs functions such as dissemination of information to the media.
Protected Corridor Operation- A warm zone response concept in which law enforcement forms a secure path through which fire and EMS responders can care for and extract victims.

Protected Island Operation- A warm zone response concept in which law enforcement forms a secure perimeter around fire and EMS responders.
Rescue Group- Fire or EMS personnel (two or more) assigned to a Rescue Task Force for the purpose of victim triage, delivery of threat-based care and extraction to a Casualty Collection Point or Treatment Area.
Rescue Task Force- A combination of law enforcement who provide force protection and fire and/or EMS personnel. The RTF may triage, provide threat-based care and/or extract victims to a casualty collection point or other location. The RTF might also be tasked with other tactical objectives such as breaching, utility control, managing building systems and/or fire control.
Threat-based Care- Medical care as determined by the conditions that are present.
Treatment Area- A location for the treatment of victims after extraction and triage, prior to loading (based on priority) for transport to definitive care.
Unified Command- An authority structure in which the role of incident commander is shared by individuals from all responding organizations responsible for the incident, operating together to develop a single incident action plan. During an active shooter/mass casualty incident, Unified Command generally consists of law enforcement, fire, EMS and emergency management representatives at a minimum.
Zones- *HOT ZONE*- an area where there is a known hazard or direct and immediate life threat.
WARM ZONE- an area where there is the potential for a hazard or an indirect threat to life.
COLD ZONE- an area where there is little or no threat to life nor hazards.

Priorities

A. Firefighter Safety
B. Life Safety
C. Incident Stabilization
D. Property Conservation

Risk

Williamson Fire & Rescue shall assess the risk of an active shooter/mass casualty incident. Recognizing the likelihood of such as event occurring at businesses, schools, churches and open assembly areas based on historical events, the fire department shall take into consideration active shooter hazards when conducting preplanning for these occupancies. Preplans shall document vulnerability factors such as occupancy, easy access, threat history and/or risk to the public

Coordination with EMS and law enforcement shall be critical to a safe and efficient response. The fire department shall defer to EMS in matters of patient care. The fire department shall defer to law enforcement for determination of a secure scene with an expectation that law enforcement shall approach the incident and move to subdue or contain the threat. The fire department response component must stage a safe distance until authorized by law enforcement to approach the scene. Law enforcement

shall define Control Zones (HOT, WARM, COLD) as they work to contain and secure the scene. The geographical descriptions of the Control Zone perimeters shall be communicated to the Unified Command for dissemination to all responders. If Unified Command has not yet been established, this information shall be relayed to responders via ECOM.

It is important to remember that active shooter/mass casualty incidents are crime scenes. Personnel must perform assigned tasks but should make reasonable efforts to not disturb the scene in order to preserve evidence.

Procedure

Williamson Fire & Rescue personnel available for response to an active shooter/mass casualty incident must report to a fire station and respond in a fire department apparatus or vehicle. No personnel shall respond directly to the incident scene in a privately-owned vehicle.

If the fire department responds to or becomes aware of an active shooter/mass casualty threat, they shall stage a safe distance away from the location.

If they encounter an active shooter/mass casualty threat on a scene, they shall retreat to safety.

All fire department personnel shall stage until law enforcement declares the scene safe for fire department response.

The first arriving unit or officer shall proceed to the law enforcement command post and establish a Unified Command. That fire department representative shall share responsibility within the Unified Command to achieve shared objectives via a common strategy.

An active shooter/mass casualty incident will quickly overwhelm the resources of Williamson Fire & Rescue. The ranking fire officer on the scene early in the incident must quickly develop situational awareness of the scope of the incident and request a mutual aid response that is more than adequate for mitigation of the incident. The delayed response of resources from neighboring agencies can be minimized by an early request for aid. An initial aid request for two engines, a truck company and a chief officer from the two geographically closest municipal fire departments plus a number of ambulance units sufficient for transporting the estimated number of patients should be considered.

The Unified Command, or in its absence, law enforcement shall establish zones designating levels of safety. No responder shall operate within a zone for which they have not been properly trained or equipped.

- The HOT ZONE is an operational area within the incident location containing a direct and immediate threat to responder safety. This zone has not been secured.
- The WARM ZONE is an operational area within the incident location with potential for threats to responder safety. This zone has been secured by law enforcement but access for patient treatment and removal must be done with law enforcement escort for protection. Depending on the footprint of the incident location, a Casualty Collection Point may be created to gather victims before escorted removal to safety.
- The COLD ZONE is an operational area within the incident location with minimal threat to responder safety. Patients may be provided medical care at a Treatment Area in this zone while awaiting transport to a hospital.

Williamson Fire & Rescue personnel must be properly trained and equipped to operate in each zone. All fire personnel operating at an active shooter/mass casualty incident shall wear an identifying garment or visible identification.

Williamson Fire & Rescue personnel do not at present have training that complies with the guidelines of *Tactical Emergency Casualty Care (TECC)* at either the First Responder or BLS/ALS Provider level. This type of patient care shall be referred to as threat-based care and is required to operate in a WARM ZONE. Williamson Fire & Rescue personnel do not have threat-based care training or the ballistic protective equipment to operate within a Rescue Task Force. Fire personnel may only operate in the COLD ZONE where they may assist EMS with the triaging and treatment of victims awaiting transport to definitive care. These fire personnel may also assist loading patients for transport. Williamson Fire & Rescue personnel shall not knowingly enter a HOT ZONE. If fire personnel find themselves in a HOT ZONE, they shall remove themselves from the hazard or request help and seek shelter while awaiting a law enforcement rescue.

Williamson Fire & Rescue personnel not qualified to provide patient care shall assist law enforcement (if requested) with maintaining a perimeter between COLD ZONE and outside the incident scene. Fire personnel without medical certifications shall also be assigned to maintain egress pathways for ambulances transporting patients to definitive care.

Appendix F: Williamson Fire & Rescue *Proposed* Active Shooter SOG

Williamson Fire & Rescue

Standard Operational Guidelines

Subject: Active Shooter/Mass Casualty Response

SOG # 4.16 **Issue Date:** TBD *DRAFT VERSION*

Purpose

Williamson Fire & Rescue has established this guideline to aid in active shooter/mass casualty operations. These following guidelines establish the response protocol and incident command structure to successfully mitigate this type of emergency.

Definitions

Active Shooter- One or more individuals actively engaged in harming, killing, or attempting to kill people in a populated area with the use of firearm(s).
Ambulance Exchange Point- A geographical location where transport vehicles are available to transport casualties.
Ballistic Protective Equipment- An item of personal protective equipment intended to protect the wearer from threats that could include ballistic threats, stabbing, fragmentation or blunt force trauma.
Casualty Collection Point- A temporary location used for the gathering, triage, medical stabilization and subsequent evacuation of nearby casualties. May be used where vehicular access might be limited and is usually occurring in the warm zone.
Community Resiliency Center- A place of healing a support dedicated to serving as a resource and referral center for residents, visitors and responders affected by an active shooter/mass casualty incident. A CRC will also provide ongoing services and assistance to victims, family members, first responders and community members.
Emergency Communications Center (ECOM)- The physical location at which the coordination of information and resources to support incident management (on-scene operations) activities normally takes place.
Evacuation Corridor- A pathway secured by law enforcement for the purpose of accessing and removing victims.
Force Protection Group- Law enforcement officers (two or more) assigned to a Rescue Task Force for the purpose of protecting EMS or firefighters
Incident Command Post- A location (usually in the COLD ZONE) used by the Incident Commander or Unified Command for the purpose of command and control.
Joint Information Center- A location used to coordinate critical emergency information, crisis communications and public affairs functions such as dissemination of information to the media.

Protected Corridor Operation- A warm zone response concept in which law enforcement forms a secure path through which fire and EMS responders can care for and extract victims.
Protected Island Operation- A warm zone response concept in which law enforcement forms a secure perimeter around fire and EMS responders.
Rescue Group- Fire or EMS personnel (two or more) assigned to a Rescue Task Force for the purpose of victim triage, delivery of threat-based care and extraction to a Casualty Collection Point or Treatment Area.
Rescue Task Force- A combination of law enforcement who provide force protection and fire and/or EMS personnel. The RTF may triage, provide threat-based care and/or extract victims to a casualty collection point or other location. The RTF might also be tasked with other tactical objectives such as breaching, utility control, managing building systems and/or fire control.
Threat-based Care- Medical care as determined by the conditions that are present.
Treatment Area- A location for the treatment of victims after extraction and triage, prior to loading (based on priority) for transport to definitive care.
Unified Command- An authority structure in which the role of incident commander is shared by individuals from all responding organizations responsible for the incident, operating together to develop a single incident action plan. During an active shooter/mass casualty incident, Unified Command generally consists of law enforcement, fire, EMS and emergency management representatives at a minimum.
Zones- *HOT ZONE*- an area where there is a known hazard or direct and immediate life threat.
WARM ZONE- an area where there is the potential for a hazard or an indirect threat to life.
COLD ZONE- an area where there is little or no threat to life nor hazards.

Priorities

A. Responder Safety
B. Life Safety
C. Incident Stabilization
D. Property Conservation

Risk

Williamson Fire & Rescue shall assess the risk of an active shooter/mass casualty incident. Recognizing the likelihood of such as event occurring at businesses, schools, churches and open assembly areas based on historical events, the fire department shall take into consideration active shooter hazards when conducting preplanning for these occupancies. Preplans shall document vulnerability factors such as occupancy, easy access, threat history and/or risk to the public

Coordination with EMS and law enforcement shall be critical to a safe and efficient response. The fire department shall defer to EMS in matters of patient care. The fire department shall defer to law enforcement for determination of a secure scene with an

expectation that law enforcement shall approach the incident and move to subdue or contain the threat. The fire department response component must stage a safe distance until authorized by law enforcement to approach the scene. Law enforcement shall define Control Zones (HOT, WARM, COLD) as they work to contain and secure the scene. The geographical descriptions of the Control Zone perimeters shall be communicated to the Unified Command for dissemination to all responders. If Unified Command has not yet been established, this information shall be relayed to responders via ECOM.

It is important to remember that active shooter/mass casualty incidents are crime scenes. Personnel must perform assigned tasks but should make reasonable efforts to not disturb the scene in order to preserve evidence.

Procedure

Williamson Fire & Rescue personnel available for response to an active shooter/mass casualty incident must report to a fire station and respond in a fire department apparatus or vehicle. No personnel shall respond directly to the incident scene in a privately-owned vehicle.

Fire department personnel shall possess the following competencies before responding to an active shooter/mass casualty incident. They shall have knowledge of:

- Incident notification procedures
- Resources responding based on alarm and incident type
- Procedure for active shooter/mass casualty response activation
- Communications procedures
- Mayday procedures
- Procedures for reporting to the Unified Command
- Procedure for initiating personnel accountability
- Provision of threat-based care
- Designation of zones, zone PPE requirements, zone responsibilities, zone hazards
- Signs and symptoms of hazardous exposures
- Decontamination procedures
- Available medical supplies and their use within the appropriate scope of practice
- Ballistic protective equipment, its uses and limitations
- Care of victims in a WARM ZONE:
    - Rescue Task Force roles and responsibilities
    - Protected island operations
    - Protected corridor operations
- Proper apparatus positioning and staging
- Recognizing improvised or otherwise hazardous devices designed to damage or harm

- Understand the following off-site operations that will occur in tandem with and after the active shooter incident has been ended
  - Victim's family information center
  - Public information distribution center
  - Witness debriefing location
  - Patient transport area
  - Mobile communications support
  - Security procedures for off-site operations
- Operational transition to a recovery phase

If the fire department responds to or becomes aware of an active shooter/mass casualty threat, they shall stage a safe distance away from the location. If they encounter an active shooter/mass casualty threat on a scene, they shall retreat to safety, describe the situation to ECOM and request an active shooter/mass casualty response plan activation.

The active shooter/mass casualty plan activation shall direct ECOM to dispatch the following resources for locations within the Williamson Fire & Rescue service area:

Type 1: (open assembly areas, schools, large churches or businesses)
Large shall describe a facility with greater than 15,000 square feet or a typical occupancy of more than 25 people. In addition to law enforcement, first alarm assignment shall be: 6 ambulances, 5 closest volunteer fire stations, 2 engines, 1 truck and 1 chief each from the two nearest career fire department. (estimated personnel: 20 volunteer, 20 career, 12 EMS personnel)

Type 2: (small churches or businesses)
In addition to law enforcement, first alarm assignment shall be: 4 ambulances, 3 closest volunteer fire stations, 2 engine, 1 truck and 1 chief from nearest career fire department. (estimated personnel: 12 volunteer, 10 career, 8 EMS personnel)

All fire department personnel shall stage a safe distance away from the scene until law enforcement declares the scene safe for fire department response.

The first arriving unit or officer shall proceed to the law enforcement command post and establish a Unified Command. If a command post has not been established, one shall be established in a secure area within the COLD ZONE. Unified Command shall consist of representatives of the following disciplines: law enforcement, EMS, fire and emergency management. These representatives shall share responsibility within the Unified Command to achieve shared objectives via a common strategy. Using the principles of the Incident Management System, the Unified Command shall establish a Command Post and pursue the following objectives:

1. provide for the safety of citizens and responders

2. evaluate risks to people, property and public confidence
3. establish and maintain means of communications
4. develop an Incident Action Plan (IAP) that supervises the incident, manages resources and permits span of control
5. establish and maintain personnel accountability
6. periodically review and revise the IAP
7. Coordinate the delivery of public information
8. Maintain a command structure until it can be terminated

In the absence of communications interoperability, the Emergency Operations Center shall ensure that the locations of incident command, staging, triage and other functional locations are relayed to all responding resources.

The Unified Command, or in its absence, law enforcement shall establish zones designating levels of safety. No responder shall operate within a zone for which they have not been properly trained or equipped.

- The HOT ZONE is an operational area within the incident location containing a direct and immediate threat to responder safety. This zone has not been secured.
- The WARM ZONE is an operational area within the incident location with potential for threats to responder safety. This zone has been secured by law enforcement but access for patient treatment and removal must be done with law enforcement escort for protection. Depending on the footprint of the incident location, a Casualty Collection Point may be created to gather victims before escorted removal to safety.
- The COLD ZONE is an operational area within the incident location with minimal threat to responder safety. Patients may be provided medical care at a Treatment Area in this zone while awaiting transport to a hospital.

Williamson Fire & Rescue personnel must be properly trained and equipped to operate in each zone. All fire department responders on scene must complete training that complies with the guidelines of *Tactical Emergency Casualty Care (TECC)* at either the First Responder or BLS/ALS Provider level. This type of patient care shall be referred to as threat-based care. Fire department personnel must be able to complete the following tasks in order to operate in each zone.

- The HOT ZONE is an unsecure area. Fire personnel must recognize they are in a hazardous area and communicate this to the Incident Commander/Unified Command. They should take steps to escape or hide and be prepared to provide threat-based care.
- The WARM ZONE: If NOT a part of a Rescue Task Force, personnel must be able to determine the number of casualties, locate a Casualty Collection Point, provide threat-based care, constantly evaluate the area for threats and recognize when the zone has become HOT.

If part of a Rescue Task Force, personnel must be able to determine the number of casualties, triage patients, extract patients to a Casualty Collection Point or Treatment Area, provide threat-based care, constantly evaluate the area for threats and recognize when the zone has become HOT. The RTF might be tasked to manage building systems, control utilities or extinguish fire. The fire personnel must stay together and stay with the law enforcement component assigned to provide force protection.

- The COLD ZONE is a secure area. Fire personnel must be able to provide threat-based care, triage, treat and assist with transport of patients, constantly evaluate the area for threats and recognize when the zone has become HOT or WARM.

Williamson Fire & Rescue personnel must possess the appropriate level of personal protective equipment to operate within an assigned zone.

- HOT ZONE- No fire personnel will be knowingly assigned to a HOT ZONE, personnel who find themselves in a HOT ZONE must don a Level III ballistic vest with a “RESCUE” identifier tag and ballistic helmet if available. Personnel should communicate their position and condition, take steps to escape or hide and be prepared to provide threat-based care.
- WARM ZONE- Fire personnel operating in a WARM ZONE must wear a Level III ballistic vest, a “RESCUE” identifier tag on the vest or other garment and possess a radio capable of transmitting/receiving on the incident frequency.
- COLD ZONE- Fire personnel operating in a COLD ZONE must wear an identifying garment or visible form of identification.
- Rescue Task Force- fire personnel assigned to operate within a Rescue Task Force must wear a Level III ballistic vest with a “RESCUE” identifier tag and a ballistic helmet. Each RTF fire member must carry a flashlight, an RTF medical kit, a radio with a shoulder microphone and medical exam gloves. The RTF group must also carry at least one Mass Casualty Incident Bleeding Control Kit (MCI kit) and at least one portable patient litter.

Additional PPE for each zone may be dictated by the Unified Command depending on the incident needs.

In the event that actively burning fire is a part of an active shooter/mass casualty incident scene, the fire will be allowed to burn until law enforcement has declared the scene to be secured or the Unified Command has developed and initiated an Incident Action Plan for fire attack.

Rescue Task Force Operations

Law enforcement officers working as part of the response team to subdue or contain the threat shall identify the need for a Rescue Task Force and communicate the need to the Incident Commander or Unified Command. The incident may require multiple Rescue Task Forces depending on the number of patients. A Rescue Task Force that

encounters more victims than they can expeditiously remove to a CCP or Treatment Area shall notify the Incident Commander or Unified Command of the need for additional RTFs.

Fire and/or EMS personnel assigned with a Force Protection Group to form a Rescue Task Force shall gather the appropriate gear and equipment for the RTF task assignment. The Rescue Group Leader will obtain a briefing from the Force Protection Group Leader to ensure that all members understand the RTF objectives. During operations of the RTF, the Force Protection Group Leader is in charge of the RTF and all members report to the FPG Leader.

The goal of the Rescue Task Force is to locate victims, triage victims, provide threat-based care, and extract victims to a Casualty Collection Point or from the CCP to the Treatment Area. The Force Protection Group's primary task is to defend and protect the Rescue Group from threats and hazards. The principles described in NAEMT's Tactical Emergency Casualty Care (TECC) shall guide the actions of the Rescue Task Force.

The Unified Command shall establish a Joint Information Center (JIC) and designate its location. The JIC will be staffed by personnel from EMA for incidents taking place in unincorporated parts of the county. Williamson Fire & Rescue personnel shall refer all requests for information or comment to the JIC.

Transition to Recovery

After Law Enforcement has removed all threats to the safety of the public and responders and fire/EMS has treated and transported all patients to definitive care, the Unified Command shall consider the continuity of operations from response to recovery. Unified Command may stay in charge of the scene during the recovery period until an appropriate point in time is chosen to disband or transfer the command.

For incidents occurring in unincorporated parts of Williamson County, Williamson EMA shall have responsibility for operations during the recovery period once the Unified Command has terminated. Recovery shall constitute a variety of actions including criminal investigations, damage assessment, victim unification and notification and civilian volunteer coordination. Williamson Fire & Rescue shall support Williamson EMA in the provision of recovery assistance.

Appendix G: Williamson Fire & Rescue Proposed Active Shooter Response Equipment

Ballistic Vest-	NIJ 06 Level III Armor Ballistic Protection Front and back MOLLE attachment system Rescue Handle With detachable personal medical kit Contents- 4 CAT tourniquets 2 trauma dressings 2 rolled gauze 2 nasopharyngeal airways with lubricant 1 vented chest seal 3 pair medical exam gloves 1 pair trauma shears Black with "Rescue Task Force" identifier	$1,250.00 each
Helmet-	Batlskin Viper A3 Helmet with NIJ Level IIIA protection Black	$400.00 each
RTF MCI Bleeding Control Back Pack-	Contents- 8 pair medical exam gloves 6 CAT tourniquets 4 SWAT-T tourniquets 6 pressure dressings 8 chest seals 2 rolls of medical tape 6 hypothermia blankets 6 hand sanitizers 8 nasal airways with lubricant 1 quick litter 2 pair of trauma shears 1 drag sling webbing 8 compressed gauze sets Black	$804.00 each
Patient Quick-Litter- patient carry device		$20.00 each
Issued to each Station: 2 vests, 2 helmets, 1 MCI pack, 4 litters		$4,184.00
4 Williamson Fire & Rescue stations:		$16,736.00