Building Safety and Security Workshop

May 2018
Disclaimer
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Preface and Acknowledgements

This report summarizes the results of the National Fire Protection Association (NFPA) Building Safety and Security Workshop, held May 10-11, 2018, in Quincy, Massachusetts. The workshop was sponsored and hosted by NFPA.

Regardless of the reasons, viewpoints, rhetoric or debate, one thing is clear — the number of targeted violence incidents and the consequence of these events is part of the mainstream conversation in the United States. Seemingly, no occupancy type or venue is immune from such violence. In the last six years, targeted violence events have unfolded in schools, office buildings, a movie theater, a retail establishment and an outdoor concert venue. While the bulk of these events involve guns as the primary weapon, other weapons of choice include knives, explosives or a vehicle.

NFPA’s proactive approach to address targeted violence governs a wide variety of standards and protocols, including building design and configuration, coordination by first responder agencies and the internal planning for building occupants to be in a position to respond to these situations. This approach requires a balancing act that integrates security provisions with the other code-based provisions successfully implemented for decades. NFPA’s 2014 workshop on the security challenge focused on the K-12 and college/university environments. As a result of those workshop recommendations, we released the 2018 edition of several of our codes, including NFPA 1, Fire Code, NFPA 101, Life Safety Code, and NFPA 5000, Building Construction and Safety Code, that expanded on performance criteria for locking of doors as well as providing an appropriate risk assessment to determine the need for mass notification systems (MNS) in various types of occupancies. In other words, many of the security-related elements are readily scalable to go well beyond the school environment.

The 2018 workshop was intended to continue the previous dialogue and to expand the discussion to apply beyond the educational environment. We determined what has changed, including what systems, elements or procedures now exist that did not in 2014. Ultimately, we aimed to maintain the momentum as we look to integrate security measures into our everyday lexicon and practices.

As our cadre of codes and standards continues to evolve and expand to address increasing types of hazards to both occupants as well as buildings, it is important to understand how this relatively new threat should be addressed in the codes. Ad hoc, interim solutions such as adding door locks, is oftentimes pointed to as the best or easiest solution. Many devices and configurations begin to flood the markets after these events occur. Unfortunately, these devices often violate the fundamental premise of many existing code requirements based upon a fire event.

While the contents of this report contain a broad range of new ideas, new thinking and acknowledgment of the difficult but not impossible challenges to fully address the security threats that lie ahead, it is also important to look at the broad range of existing ideas and content that the relevant codes and standards already contain that can help right now. Even as this report is being finalized, the Santa Fe, Texas school shooting occurred. Following the event, one public official stated, “There are too many entrances and too many exits.” The reality is, a building
really can’t have too many exits, but the current codes do allow you to restrict the number of access points into a building. While architects, engineers, authorities having jurisdiction and others involved in the built environment understand that, this is one example of where organizations such as NFPA can do a better job of educating or sharing information with policymakers.

So what did the participants in this workshop accomplish? Perhaps more than we could’ve asked for. The makeup of the group that we brought together was a virtual melting pot of stakeholders who brought passion, specific viewpoints, an open mind and a great ability to share their position with others. Participants were provided with read ahead materials that helped set our agenda and discussion over the two days.

In the plenary sessions, we heard from a faculty member that was wounded at Sandy Hook, a security specialist who has a handle on the global threats that his company works to address, a lawyer who reminded us to think beyond the expected or anticipated threats and hazards, a university professor who looks at the human behavior and response challenges during “short fuse” events, and from one of my NFPA work colleagues who told us all about the new NFPA standard that deals with response to these incidents.

Each of these speakers was carefully chosen to help prompt our discussions, remind us of the realities that are out there, assure us that fixing these problems isn’t necessarily easy and that a one-size-fits-all solution is not available. Likewise, our workshop participants jumped right into the facilitated group discussions. One group focused on the built environment, or what I describe as potential brick-and-mortar solutions. The other group focused on the occupant response protocols, including preparation and planning for building occupants and coordination with and between first responders.

While the content in the following pages will elaborate on the discussions that ensued over the two-day workshop, several themes, solutions, and ideas emerged. A few examples addressing short- and long-term components and a reiteration of ideas raised in 2014 include:

- **Expand the understanding of current code provisions** that already address security-related challenges in the built environment. This effort will be directed more towards the policymakers who may not realize the number of available options that currently exist to secure buildings from unwanted intruders.

- **Maintain vigilance in the codes** to prevent and prohibit the use of ad hoc door locking devices, which often make people feel safe with no demonstrated effectiveness.

- **Notify local first responder agencies about restricted access** to buildings and ensure they have the ability to make entry from other points that are normally not available.

- **Utilize the concept of intelligent fire alarm systems** (most likely using MNS concepts) to integrate voice and digital messaging strategies that can alert building occupants of non-fire events and emergencies.

- **Examine best approaches or methods to integrate security measures into codes** and standards rather than relying on them as a standalone afterthought with regard to the built environment.
• **Examine the creation of a federal entity to conduct neutral follow-up incident reviews** after targeted violence events to review the incident from a top-to-bottom perspective. This entity could be modeled after the NTSB or NCST.

• **Emphasize the need for first responder agencies to have interoperability** between communication systems and related hardware.

• **Consider development of an educator curriculum on security** that could be offered to school faculty and administrative staff.

• **Develop a national campaign** related to the “Run. Hide. Fight.” curriculum that would help prepare citizens on the appropriate actions to take during these events.

These few items mentioned above garnered the most support during the group discussions. However, it’s important to note that this report contains numerous other worthy ideas and recommendations. One of the benefits of this workshop report is the fact that it contains essentially every idea, concept or potential solution based on the questions that were asked. No idea should be considered in a negative light in any way — this is a complex problem and complex problems often require us to proceed through a series of thought-provoking exercises which might include some off-the-wall thinking, but that’s exactly what we need at this point in time.

I was able to work with an incredible group of colleagues on this project. I want to thank in particular the NFPA staff who made this a success, including: Linda MacKay who managed the database of invitees, participants, letters of invitation and other logistical needs; Karen D’Arcy who provided the on-site support in the NFPA conference center; Amanda McCarthy who in short order acquired and managed our hotel room block; Greg Harrington, Dave Hague, Janna Shapiro and Tracy Vecchiarelli who provided facilitation support in the breakout groups; Lauren Depew who assisted with our social media content; Susan McKelvey who organized a series of online survey questions prior to the event and who assisted with the review of this report; Matt Klaus who assisted with some of the early planning concepts; and last but not least, Lorraine Carli who served as our moderator over the two days.

Thanks also go to our facilitation provider, Energetics. On-site facilitation support was provided by Walt Zalis and Emmanuel Taylor. Katie Tartaglia, and Kate Schwartzer, along with Walt and Emmanuel, prepared the content for this report. Of course, this report would not have been possible without the specialized knowledge and insight contributed by the recognized experts in various aspects of building safety and security. I am grateful for your participation, input and contributions. These experts took time from their busy schedules to participate in the workshop and share their insight, which forms the basis for this report. These individuals are listed in Appendix A.

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1 Introduction

1.1 Overview

Comprehensive safety and security protocols must address two sets of needs for building occupants: fire safety (generally referred to in this document as “safety”) and safety from a hostile actor (generally referred to in this document as “security”). Finding the optimal balance between these equally critical—yet sometimes contradictory—areas remains challenging. Seeking solutions, the National Fire Protection Association (NFPA) held the Building Safety and Security Workshop May 10–11, 2018, in Quincy, Massachusetts. The workshop brought together a diverse group of stakeholders to focus on targeted violence events and help prioritize the next layers of “security safety” to be written into codes, planning documents, and related outreach materials.

The 2018 workshop expands on work from a previous NFPA-organized event, the December 2014 School Safety, Codes and Security Workshop. In 2014, NFPA recognized the need to address the disturbing escalation in targeted violence events on school and college campuses across the United States. In response to the trending requirements, NFPA held the 2014 workshop to gather professionals with expertise in developing appropriate building design and response strategies for school emergency situations. The workshop provided an opportunity for experts to address the challenge of making schools more secure while also maintaining fire, building, and life safety considerations. During the workshop, these experts ruminated on an active shooter scenario and debated multiple hazard planning concepts in schools; the appropriateness of various fire alarm system, lockdown, and door-locking strategies; and other planning and procedural actions. The findings from that workshop were issued in May 2015 and have served as a foundation for the development and implementation of new requirements and provisions in several NFPA codes and standards.

Since the 2014 workshop, targeted violence event concerns have continued to escalate—not only in schools (e.g., the recent shootings in Parkland, Florida and Santa Fe, Texas) but at a wide range of venues: an office in San Bernardino, California; an outdoor concert venue in Las Vegas, Nevada; the Navy Yard in Washington, DC; a movie theater in Aurora, Colorado; a church in Sutherland Springs, Texas; and a store in Thornton, Colorado. Ongoing attention to both code-based provisions and emergency response protocols is necessary not only in the academic environment but must obviously extend well beyond those settings.

Although the 2014 workshop was focused on the K-12 and college/university environment, the various NFPA technical committees involved with NFPA 101 and NFPA 5000 found several of the recommendations equally applicable and scalable to a host of other occupancy types. For example, one of the workshop recommendations was to develop guidance for use among and between the various first responder agencies who respond to targeted violence events. The recent development and issuance of NFPA 3000TM (PS) Standard for an Active Shooter/Hostile Event Response (ASHER) Program is a prime example of such guidance.

As security becomes mainstreamed as a goal and objective in codes such as NFPA 1, NFPA 101 and NFPA 5000, blending and integrating the requirements from the available security standards
will be a priority for development of the next edition of these codes. In addition, emergency action plans for building occupants must be all-encompassing and built around an “all reasonably foreseeable hazards” approach that considers targeted violence and hostile acts. While existing building, life safety, and fire codes already address these concepts to some degree, the May 2018 workshop built on the 2014 workshop findings by considering other measures and means of integrating them. The 2018 event also provided an opportunity to broaden the focus beyond academic settings to include occupancies of all types.

### 1.2 Workshop Scope and Objectives

The 2018 workshop purpose was to identify and underscore competing objectives of safety and security. Participants reviewed the current building, life safety, and fire code provisions for elements such as egress and systems design, then identified new solutions, strategies, and building features. They were further asked to identify priority solutions to integrate, balance, and blend security-related goals and objectives into the range of built environment regulations. This process can be complex in that it involves:

- Ensuring mitigation measures are not in conflict (i.e., that one measure is not at the expense of other measures)
- Identifying brick-and-mortar solutions (e.g., building qualities or attributes that can influence enhanced security measures)
- Developing emergency action plans (EAPs) for building occupants, including modifying the EAP to account for occupant responses
- Ensuring the EAPs include proper interface and training between building owners, facility managers, and first responders
- Determining the role of governmental jurisdictions in this process (i.e., identifying potential political challenges, funding measures, and means to enforce security features)

Workshop attendees participated in the following workshop objectives:

- Discuss the changes to various NFPA codes and standards since the 2014 workshop.
- Identify areas of NFPA responsibility in overall building code/safety that still require additional time and effort to address overall security challenges.
- Recommend additional changes to NFPA codes and standards to help integrate and streamline security mitigation measures into built environment regulations.
- Discuss new and potential projects (from NFPA and other organizations) that have been/could be launched in the security space to help resolve competing safety and security objectives.

The following general themes and questions were covered during the discussion:

- **Multiple hazard planning concepts in buildings:** Most of the current code provisions in building, fire, and life safety codes are based on fire events. How do other events potentially affect these rules?
- **Fire alarm systems:** Should there be a delayed response for evacuation when the building fire alarm system is activated? What are the implications of that?
- **Lockdown:** What does a lockdown in a building look like?
• **Locking hardware:** What does the currently available code-compliant locking hardware look like?

• **Notification procedures:** What notification procedures need to be in place?

• **Line between fire safety and building security:** Do certain code and system requirements work to defeat fundamental security models?

• **Occupancy and weapon types:** Workshop participants considered all building occupancy types, including assembly, educational, business, mercantile, and healthcare. Discussion also covered a range of targeted violence event types, including gun/knife, fire, explosives, and vehicle attacks.

### 1.3 Workshop Format

The two-day program began with speakers selected for their substantial knowledge and unique perspectives on building security and safety to help meeting participants think further about the objectives for the workshop. Speaker biographies are available in Appendix D, with the following presentations located in Appendix E:

- *The Sandy Hook School Shooting* by Natalie Hammond
- *Security Challenges in Today’s World* by Geoff Craighead, CPP
- *Emergency Planning and “Black Swans”* by Steven A. Adelman, Adelman Law Group
- *Warning Systems: The Human Dimension* by Dr. Joseph E. Trainor, University of Delaware
- *NFPA 3000™ (PS)* by John Montes, NFPA

Each participant was assigned to a specific breakout session to ensure every group would feature diverse perspectives on the topics of Building Environment and Occupant Response. This approach facilitated holistic and comprehensive responses to the questions posed during the sessions. The first day of breakout sessions began with brainstorming, with participants contributing ideas in response to specific questions. Participants prioritized these ideas based on the likely effectiveness in balancing building security with fire safety. The breakout sessions continued into the second day, when participants broke into smaller groups to delve further into high-priority topics.

The workshop concluded with each group presenting highlights from its respective breakout session.

### 1.4 Report Layout

The remainder of this document presents the workshop results. Section 3 contains breakout session results, with Section 3.1 providing the Built Environment session results and Section 3.2 summarizing the Occupant Response session results. Participant output is presented in tables and figures, along with a discussion of the output in the body of the report. Section 2 provides a summary of the workshop and its findings.

The report also provides context and background information to enhance understanding of the discussion of results. In most cases, participants’ responses have not been edited, but in some instances, the ideas have been minimally amended to improve clarity while maintaining the
original intent. In addition, some responses were consolidated to avoid duplication and to identify common themes. The tables objectively lay out ideas generated by the participants and the figures expand on a few participant-prioritized ideas with the best prospects to balance building security with fire safety. The figures expound on concepts, lay out a notional method for implementing those concepts, and identify additional relevant information.

Seven appendices provide additional information about the workshop:

- Appendix A. Workshop Participants
- Appendix B. Related Codes and Documents
- Appendix C. Acronyms and Abbreviations
- Appendix D. Workshop Speaker Bios
- Appendix E. Workshop Presentations
- Appendix F. Building Safety/Security Summit Workshop Agenda
- Appendix G: NFPA Facebook Community Polls

NFPA has made this report available on its website.
2 Workshop Results

The *NFPA Building Safety and Security Workshop* held May 10-11, 2018 advanced the conversation about balancing life safety needs with building security requirements. This dialogue started at the *NFPA School Safety, Codes and Security Workshop* in 2014. While the conversation must continue, and the balance between fire codes and security protocols will continue to evolve, this workshop brought to light a number of important topics:

- **The built environment requires changes in both the short, and the long-term.** While attention is necessary today to ensure buildings are utilizing approved hardware (such as proper door locking mechanisms), strategies must be agreed upon in the long term on how to better integrate built-in alarms and related systems for both fire and targeted violence events.

- **Codes themselves need further attention, to raise awareness of and enhance current codes.** On one hand, more attention needs to be paid to existing codes. Education, training, and awareness programs can allow the beneficial aspects of existing code requirements to further its reach and potentially save lives. On the other hand, attention must be given to the enhancement of existing codes to bring in certain elements that specifically address security. The expectation is that the code will need to evolve, and a process that enables more agile rollout of new provisions to allow for faster implementation will be necessary to keep up with building security needs.

- **Smart building integration will be key to ensuring building safety and security in the future.** In addition to further automation, security and safety systems within buildings will need to speak with each other in order to determine best messaging for building occupants. This new frontier will require significant technology upgrades over time, and strict attention to cybersecurity.

- **While technology improvements will help buildings become more safe and secure, education for occupants is just as important.** Curriculum development that balances life safety and security needs can be utilized not only by teachers, but by facility managers and plan developers to enable occupants to think clearly and make potentially lifesaving decisions during an emergency situation.

These themes were reoccurring throughout the two-day workshop, as participants representing a number of sectors agreed notionally on the importance of these ideas. While other priorities emerged during discussions concerning the issues that exist between existing life safety codes and current security requirements, the next steps should provide at least some attention to these four themes.

This report summarizes the results of the workshop and provides crucial findings that NFPA stakeholders can build upon as they take steps to make buildings safer through the refinement of codes and the enhancement of building systems. This report along with additional information on the topic can be found on the NFPA website.

Completion and issuance of this report does not represent the end of these discussions, nor does it imply all of the issues have been solved, or even identified. The workshop afforded an opportunity for the stakeholder groups identified in the report to meet in one place at one time to exchange ideas and open up a clear channel of communication.
workshop was the balance between life safety and security needs, stakeholders did consistently reflect on the need to balance quality of life and protection of life. While metal detectors, barbed-wired fences, and concrete walls can provide significant security and protection, the social, cultural, and psychological implications of their use must also be considered. Ultimately, the buildings community will need to determine if the changes produce environments that stakeholders can still work, live, and learn in.
3 Workshop Output

3.1 Built Environment Sessions

3.1.1 Introduction

The 2018 Building Safety and Security Workshop held two breakout sessions, with one group focusing on built environment issues and one on occupant response (see Section 3.2). The regulatory-themed Built Environment session included questions about both safety and security, with a focus on code development, improvement, and expansion as it may relate to building design, configuration, layout, and system solutions. While the 2014 workshop examined the issues specific to schools under siege by a hostile actor, the 2018 discussion opened up the scope to discuss potential scenarios in which current code provisions may contradict or work against best security practices. The discussion covered all occupancy types, as well as all attack types. While the 2018 scope was broad, group participants were able to arrive at specific conclusions about 1) the changes needed in codes to account for these events, 2) the challenges to providing both fire safety and overall security, and 3) the potential solutions to these issues.

At the conclusion of the session, participants developed action plans that can positively impact building regulations and targeted violence event types. Participants agreed that current code requirements have been effective for protecting occupants from many imaginable emergency, disaster, and fire events, but shifting circumstances indicate a need to review and adjust those regulations and established actions to better ensure safety and security in all buildings.

3.1.2 Impact to codes

The session opened with a discussion on the impacts of targeted violence events on current building code provisions for fire and life safety, acknowledging that these codes already account for hazards beyond fire (e.g., wind, earthquake, hazardous materials, stair safety, and crowd management). The discussion focused on building codes and potential conflicts between safety and security, with participants identifying several topic areas for further discussion (in Table 1).

In considering the impact of targeted violence events, participants appropriately focused on code requirements that affect the built environment, taking into consideration the influences of building alarms, door-locking mechanisms, and the general movement of occupants. Participants agreed that obvious safety measures during a fire event (e.g., open, unfettered egress and alarms indicating a signal for occupants to exit) are less ideal during a targeted violence event, confirming the complex nature of determining safety solutions. As noted by one of the speakers, this is often referred to as a ‘short fuse’ decision process. How certain areas within a building are currently classified and used are likely to be avoided in a fire event or targeted violence event. For example, an “area of refuge” from a fire can become the focus area of an attack.

This opening discussion established other themes that would be explored throughout the workshop, such as issues with building design (e.g., glass walls) hindering security, the fact that some existing code requirements work well but may not be fully understood, the role of connectivity, and the need for cybersecurity.

Table 1 lists participant-identified impacts of targeted violence events on current code rules.
Table 1: Impacts of targeted violence events on building, fire and life safety code provisions

<table>
<thead>
<tr>
<th>Impact to Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alarms</strong></td>
</tr>
<tr>
<td>School – fire alarm protocols in an active shooter scenario (e.g., Parkland)</td>
</tr>
<tr>
<td>False alarm set deliberately, also potentially hacking of newer notification systems</td>
</tr>
<tr>
<td>Mass Notification Systems (MNS) has new implications (drive people in/out)</td>
</tr>
<tr>
<td>When an alarm sounds, occupants will exit</td>
</tr>
<tr>
<td><strong>Door Locks</strong></td>
</tr>
<tr>
<td>Schools (K-12) - use of barricades</td>
</tr>
<tr>
<td>Fully sprinklered buildings means no more self-closing doors – allows easier access to classrooms and requires someone to close the door manually</td>
</tr>
<tr>
<td>Release/unlocking of stair doors to allow re-entry upon fire alarm allows the hostile actor greater access to do more harm</td>
</tr>
<tr>
<td>Addition of mass notification – “all hazards thinking”; changes in locking rules (new chapter in NFPA 730 for locking, new requirements in NFPA 1, NFPA 101, NFPA 5000 for locking)</td>
</tr>
<tr>
<td>Should after-market door hardware be permitted/exception?</td>
</tr>
<tr>
<td><strong>Overall Egress</strong></td>
</tr>
<tr>
<td>Impact occupant Emergency Action Plan (EAP); impact egress; impact elevators; is the assumption based on a single event or multiple events (asymmetrical attacks)?</td>
</tr>
<tr>
<td>Fire codes are designed to provide quick/free egress. Targeted violence (security) leads to more security/locks/restricted access…improperly</td>
</tr>
<tr>
<td>Egress concepts based on a single fire event and a single location. In targeted violence, multiple paths may be blocked</td>
</tr>
<tr>
<td>Current codes address single risk/hazard. Need to move to a multi-hazard approach - scopes need to be expanded</td>
</tr>
<tr>
<td><strong>Movement of Occupants</strong></td>
</tr>
<tr>
<td>Keeping people in vs. getting people out – how do we send the right message?</td>
</tr>
<tr>
<td>Area of refuge has changed</td>
</tr>
<tr>
<td>Shelter in place- become easy target?</td>
</tr>
<tr>
<td>Security measures preventing access to buildings (gates, fences, bollards) – NFPA requirements/recommendations in NFPA 730</td>
</tr>
<tr>
<td><strong>Integration/Interoperability</strong></td>
</tr>
<tr>
<td>NIMS (National Incident Management System)</td>
</tr>
<tr>
<td>Cybersecurity</td>
</tr>
<tr>
<td>Human behavior- “insider” vs. “outsider”</td>
</tr>
<tr>
<td>Fire response vs. police protocol (integration?)</td>
</tr>
<tr>
<td>Integration of fire &amp; security systems</td>
</tr>
<tr>
<td>Technology and interoperability of critical safety devices</td>
</tr>
<tr>
<td><strong>Vehicle</strong></td>
</tr>
<tr>
<td>Fire department vehicle access; vehicle attacks (car bombs, vehicles-as-weapons); Code effect: restricted vehicle access to buildings</td>
</tr>
<tr>
<td>Vehicle impact from car to truck</td>
</tr>
<tr>
<td><strong>Building Features</strong></td>
</tr>
<tr>
<td>Education on how occupants/building owners/managers can use existing building elements</td>
</tr>
<tr>
<td>Features used against occupants (educating people (all stakeholders, policy makers) on how they work in the first place)</td>
</tr>
<tr>
<td><strong>Guidelines</strong></td>
</tr>
<tr>
<td>Schools (K-12)- national lack of guidelines for holistic security solutions</td>
</tr>
<tr>
<td><strong>Building Design</strong></td>
</tr>
<tr>
<td>Vulnerability of desirable design features (additional natural light/ventilation)</td>
</tr>
<tr>
<td>Security zoning similar to fire areas (check points, safe room, calibrating response to fit scale of space served)</td>
</tr>
<tr>
<td>Open classrooms/open floor plans (office)</td>
</tr>
</tbody>
</table>
Impact to Codes

- Occupancy Types
  - So many occupancy types it’s hard to address every scenario individually
- Existing vs. New Buildings
  - Progressive improvement in hazard safety so there is some protection in existing buildings
  - Existing buildings are more challenging to retrofit. New construction can include better strategies
- Psychological
  - Psychological social issues (security measure effects on occupants)
  - No other hazard involves willful intent

3.1.3 Challenges to Status Quo during Targeted Violence Event

After discussing impacts on codes, participants identified obstacles to the built environment sector’s ability to develop solutions that address these impacts. Referring to the impacts discussed in Table 1, the group identified challenges that building owners and facility managers face in their planning processes to implement building-based solutions that walk the line between security and safety. Participants were asked to consider several issues, including the nature of fire alarms and door-locking systems that can help or hinder occupants during a targeted violence event, as well as the state of fire alarm and security system integration. Participants broke down their feedback into two challenge categories: the built environment and specific building systems (e.g., the fire alarm system).

Generally speaking, participants agreed it has become a challenge to prioritize effective change in building security in such a politically charged environment. In some cases, targeted violence events precipitate premature adoptions of solutions that are not well vetted. These instances do not allow for thorough risk assessment, which enables proper prioritization of solutions in a given environment and accounts for differences in criteria across municipalities. The concept of “lockdown” was also discussed at length during this session, with participants discussing the need for integration of building alarms and occupant situational awareness to properly implement a lockdown strategy. Other significant challenges include:

- **Perimeter:** What lies outside of the influence of traditional code provisions during a targeted violence event? An area of refuge, which may hold a concentrated group of vulnerable individuals, may become an assailant’s target.
- **Aesthetics:** While safety and security are paramount, there must be consideration as to how security upgrades affect the occupant from a mental health perspective. For example, barbed wire fences and metal detectors are not typical of a comfortable environment.
- **Timeline of developing and implementing additional/new code based provisions:** A three-year cycle to revise life safety codes may not be fast enough, especially considering addition time needed for the adoption of code. In addition, jurisdictions may (and often times do) amend consensus codes.
- **Variable door lock types**: Several currently-available aftermarket solutions may prevent emergency responder access in an emergency situation. Operation of such unsafe devices is often not obvious to most occupants.

- **Tradeoff of open egress vs. secure facilities**: Non-custodial occupants cannot be secured against their will, and this must be considered as part of the design process.

Table 2 lists participant-identified challenges that code developers may face when addressing potential impacts to code changes and requirements that will have to be considered for targeted violence events.

**Table 2: Challenges that need to be overcome to address safety and security concerns in the built environment**

<table>
<thead>
<tr>
<th>Challenges</th>
<th>Specific Systems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Analysis/Prioritization</td>
<td>Keep End Game in Mind</td>
</tr>
<tr>
<td>- Prioritizing upgrades – how does a facility determine which initiative and when?</td>
<td>- Effective solutions that consider all types of problems</td>
</tr>
<tr>
<td>- Weighing benefits of losses avoided and their understanding of potential risk</td>
<td>- For security standards, don’t go granular. Define the objective &amp; begin with the end in mind</td>
</tr>
<tr>
<td>- Risk analysis: Who can perform? Who pays for it? Acceptance criteria? Liability</td>
<td></td>
</tr>
<tr>
<td>- Balance between rational and emotional risk assessment</td>
<td></td>
</tr>
<tr>
<td>- Security measure vs. security risk</td>
<td></td>
</tr>
<tr>
<td>Cost/Politics</td>
<td></td>
</tr>
<tr>
<td>- Cost to upgrade – funding/finances</td>
<td></td>
</tr>
<tr>
<td>- Lack of resources, funds, knowledge</td>
<td></td>
</tr>
<tr>
<td>- For higher education, continually increase cost of compliance while facing lower &amp; lower public funding and rising tuition costs</td>
<td></td>
</tr>
<tr>
<td>- Consensus among decision makers; budget; politics</td>
<td></td>
</tr>
<tr>
<td>- Federal/state legislation will increase funding. Stop School Violence Act</td>
<td></td>
</tr>
<tr>
<td>- Reasonable level of safety; tenants needs; what are risks; politics; education of what $ used for</td>
<td></td>
</tr>
<tr>
<td>New vs. Old Building Stock</td>
<td></td>
</tr>
<tr>
<td>- Two paths; new schools – existing schools</td>
<td></td>
</tr>
<tr>
<td>- Brining older buildings up to meet being a “safe environment”</td>
<td></td>
</tr>
<tr>
<td>- Existing designs and conditions (old hardware, open lobbies)</td>
<td></td>
</tr>
<tr>
<td>Collaboration &amp; Compliance</td>
<td></td>
</tr>
<tr>
<td>- Facilitating a collaborative approach to planning</td>
<td></td>
</tr>
<tr>
<td>- Selling the owner vs. mandating the provisions</td>
<td></td>
</tr>
<tr>
<td>- Ensuring all tenants comply with rules; cyber security for smart buildings</td>
<td></td>
</tr>
<tr>
<td>- Recognize that security is/can be life safety (Involve builders up front)</td>
<td></td>
</tr>
<tr>
<td>Knee-Jerk Reaction (Schools)</td>
<td></td>
</tr>
<tr>
<td>- Changes from public demand vs. well-thought out collaboration</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Which priority (event) takes precedence; should we stay or should we go</td>
</tr>
<tr>
<td>- Self-preservation for the very young, old, &amp; special needs (Blurring of requirements for educational occupancies. May look like defend-in-place concepts used in health care and detention/correctional</td>
<td></td>
</tr>
<tr>
<td>Sprinklers</td>
<td>- The safety features in buildings such as sprinklers, compartmentation</td>
</tr>
<tr>
<td>Training</td>
<td></td>
</tr>
<tr>
<td>- Policy: training and education</td>
<td></td>
</tr>
<tr>
<td>Perimeter</td>
<td>- Safe alarm exit discharge areas (perimeter)</td>
</tr>
<tr>
<td>Lockdown</td>
<td>- Locking-priority: Lockdown; Fire alarm override (manual vs. auto?); who decides? How?; “Situation Awareness”</td>
</tr>
</tbody>
</table>
Challenges

- Knee jerk reaction – “Fire alarm not sounding”
- All occupancies are important, but schools are the hot topic – pressure to fix based on emotion – it’s not acceptable for kids to die in schools
- Parkland drove a FL Statewide discussion (emergency code) group – no fire authority on that group

- Aesthetics
  - Aesthetics – Does that barrier look nice in front of my building

- Code Timeline
  - Time to implement & Impact to building use during change
  - 2-3 years to develop code/2-3 years to roll out; Slow – need faster adoption

- Post-Code Mods
  - “Too many chefs”: products sales; different code; overlook them all?
  - Pressure of occupants to provide more safety even if it violates safety code

- Jurisdiction Issues
  - Will each state/jurisdiction adopt those codes? Or do what they want?
  - Jurisdiction issues/conflict

- Roadmap
  - Implement holistic solutions that are sustainable; pass guidelines; Roadmap? Make impact on next community over?

- Strategy
  - Prevent vs. slow down assailant

- General
  - Who is the threat?

- Door Locks/Egress
  - Help – stop perpetrator
  - Hinder – stop occupants
  - Needs to be integrated - who is in control to take action jurisdiction issues/conflict

- Aesthetics
  - Aesthetics – Does that barrier look nice in front of my building

- Code Timeline
  - Time to implement & Impact to building use during change
  - 2-3 years to develop code/2-3 years to roll out; Slow – need faster adoption

- Post-Code Mods
  - “Too many chefs”: products sales; different code; overlook them all?
  - Pressure of occupants to provide more safety even if it violates safety code

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  - Will each state/jurisdiction adopt those codes? Or do what they want?
  - Jurisdiction issues/conflict

- Roadmap
  - Implement holistic solutions that are sustainable; pass guidelines; Roadmap? Make impact on next community over?

- Strategy
  - Prevent vs. slow down assailant

- General
  - Who is the threat?

3.1.4 Solutions: Improving Code in the Short-Term, and Identifying Creative Longer-Term Solutions

The last two facilitated discussions of the Built Environment group focused on solutions that can answer the challenges identified in the prior discussions. This report section presents the combined findings of these final discussions. The two questions asked of participants for these final sessions were:

1. What are the existing practical, code-complying brick-and-mortar solutions that can meet these challenges? Do these solutions need more recognition, implementation, or improvement for protecting building occupants during a targeted violence event?

2. Identify the types of new developments that can ensure that building and fire codes can both address traditional life safety issues and overcome the challenges previously identified during a targeted violence event. What yet-to-be-utilized security technologies/standards need more recognition?
Table 3 lists the solutions discussed by participants aimed at combatting conflicts between current safety codes and security needs, with many ideas fitting within the security layers of deter, detect, delay, and response. The number within parentheses next to many of the inputs are an indicator of how many votes that idea received as a priority solution. Following Table 3 in section 3.1.5, additional information is provided on the priority solutions and how they were established.

Table 3: Short- and long-term built environment solutions to balance safety and security

<table>
<thead>
<tr>
<th>Improving the Regulatory Status Quo</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Short-Term Solutions</strong></td>
</tr>
<tr>
<td><strong>Fire Alarm</strong></td>
</tr>
<tr>
<td>o Intelligent alarm interlocks (per incident) (8)</td>
</tr>
<tr>
<td>o Duration of alarm &amp; possibility of volume adjustment after evacuation time passes &amp; shelter-in-place is in effect (2)</td>
</tr>
<tr>
<td>o Restrict/eliminate manual fire alarm evacuation. If restricted, send signal to control center where it can be verified</td>
</tr>
<tr>
<td>o Smart fire alarms – whole building doesn’t need to empty (6)</td>
</tr>
<tr>
<td>o Fire alarm signaling needs study – going to voice, digital messaging – many options Mass Notification System (MNS)</td>
</tr>
<tr>
<td><strong>Notification Systems</strong></td>
</tr>
<tr>
<td>o Tie communication systems to indicate the type of incident taking place</td>
</tr>
<tr>
<td>o Notification systems for buildings with no fire alarm requirements</td>
</tr>
<tr>
<td>o Transition to voice Emergency Communication Systems (ECS) and MNS solutions for incident notification – existing buildings; schools, mercantile (2)</td>
</tr>
<tr>
<td>o Increase use of delayed notification</td>
</tr>
<tr>
<td><strong>Door/Locking</strong></td>
</tr>
<tr>
<td>o Reinforcing doors/windows; education; metal detectors; protected visitor areas</td>
</tr>
<tr>
<td>o Permit two operations/actions on existing classroom doors</td>
</tr>
<tr>
<td>o Code compliant vs. ad hoc locking arrangement (12)</td>
</tr>
<tr>
<td>o For classroom door hardware – 2018 NFPA 101 and IBC both define existing practical solutions – including lockable from inside and unlockable from outside with proper credentials</td>
</tr>
<tr>
<td>o Close/lock doors; use electronic access control – all occupancies</td>
</tr>
<tr>
<td>o Intruder function American National Standards Institute (ANSI Function 10) locks &amp; exit devices; should be a requirement (1)</td>
</tr>
<tr>
<td>o Door closers; locked closed doors create safe spaces</td>
</tr>
<tr>
<td><strong>Training</strong></td>
</tr>
<tr>
<td>o Plan training drills – make it part of the culture. Need new title (11)</td>
</tr>
</tbody>
</table>
## Improving the Regulatory Status Quo

- Increase requirements for drills, emergency planning & training for staff. Increase public education
- Train school leadership; interoperability (3)
- Schools – educational campaigns to educate schools to make integrated, cost effective, long term security decisions (code compliant) (4)

- **Pull Stations**
  - Pull station in the safe vestibules; keep out of vulnerable positions or spaces (1)
  - Cross-zone detection – sprinkler/pull station (3)
  - Remove manual means (pull station) (1)

- **Perimeter**
  - Better define code provisions for perimeter
  - Stand-off distances, security threat assessment, emergency management (EM) communications features, interior metal detectors, security patrols, EM plans & strategies, education of stakeholders
  - Clearly defined security perimeter (hot-warm-cold) by occupancy? (1)
  - Security perimeter scoping changes plans

- **Metal Detection**
  - Mandated metal/explosives detection in high vulnerability occupancies

- **Equipment Evaluation**
  - Value judgement of fire protective equipment

- **Code Promotion**
  - NFPA promotion (730 & 731) (9)
  - Expanding existing requirement to other occupancies: fire alarm requirements, sprinkler system requirements, door locking, expand construction modifications (6)
  - Recognize and use current code provisions (7)

- **New Strategies**
  - Change fire alarm response to investigate before evacuation; possible relocation vs. evacuation (1)
  - Smoke compartments combined with active systems – communicate concepts (1)
  - Fire-security integration is the future (2)
  - Cross pollinate technologies

- **Technology**
  - Automated shading & lighting controls upon activation of fire alarm system
  - Control with a focused lockdown area in vicinity of event source (1)
  - What about requirement of audio surveillance of the building for intelligence gathering for first responders? (big data component)
  - Automatic notification of emergency events (2)
  - Technology for new uses (ID/plastics/metals (1)

- **Internet of Things (IoT)**
  - Security of the IoT (3)

- **Research**
  - Case studies with variables changed in code compliant designs

### 3.1.5 Built Environment Prioritization

The breakout session ended with a vote to prioritize the solutions discussed. Participants voted in response to the following question with the results listed below:

- When considering the code-related solutions previously identified, in your mind, what are the top four short-term and top two long-term ideas that could rectify the potential conflict that exists between regulatory design features and recommended actions and significantly improve building safety during a targeted violence event?
**Short-Term Solutions**

- **Training/education**
  - Make training and education available to stakeholders, enabling their informed decision-making.
  - Leverage information currently available, such as NFPA 730/NFPA 731/NFPA 3000/NFPA 101.
  - Utilize resources, leveraged technology, a unified message, and collaboration/coordination among community stakeholders.

- **Door-locking systems**
  - Prevent ad hoc devices from being utilized out of fear/emotional response or the need to “do something.”
  - Keep time-tested, successful, proven means-of-egress methods in place.
  - Maintain balance among all codes and standards, such as fire, life safety, and accessibility, with security needs.

- **Code promotion**
  - Promote broad acknowledgement of current codes and standards to ensure that non-compliant response measures, however well-intentioned, do not compromise the safety of building occupants.
  - Balance the need for free, unrestricted egress during an emergency with the need to maintain a separation from the hazard source.
  - Address the need for first responders to be granted facility access while protecting building occupants sheltering in place.

- **Intelligent fire alarms**
  - Broaden the scope of fire alarm systems so that they can be used for other events, recognizing different incident types and automatically reacting in specific ways to provide warning communication messaging. Such technology would facilitate implementing different strategies based upon the type of dynamic and changing conditions that unfold during these emergencies. These strategies may include defending in place, relocating, partial evacuation, or full evacuation (off-site/on-site). This technology would entail heavier reliance on voice communication and specific messaging.
  - The alarm system should not be adapted in a way that prioritizes security over fire safety. For example, current features, such as manual pull stations, should not be removed without proper justification.

**Long-Term Solutions:**

- **Fast-track code**
  - Existing fire and life safety codes or standards do not integrate security. The existing life safety code committees are at max capacity and do not necessarily include security experts. A new committee needs to be established to develop a new document to address the coordination of fire, life, and security safety.
• Building integration
  - Physical security systems have moved from a siloed model to fully integrated solutions that tie together video surveillance, intrusion detection, access control, environmental sensors, social media, building automation, and Building Information Modeling together. However, fire and life safety systems are typically separate.
  - Keeping unified command in mind, these systems should be interoperable because information from these systems collectively improves decision-making.
  - These systems need to adhere to a common lexicon, and reasonable practices should be set for cyber hardening of the devices that comprise the total solution.

3.1.6 Built Environment Action Plans

Following the prioritization, Built Environment participants broke into six smaller groups—one for each prioritized solution noted above—to develop specific action plans for those solutions. The smaller groups were provided with worksheets to guide their output. Figures 1–6 below show the content of the Built Environment group’s worksheets.
Stakeholders

- Code Development Organizations (ICC, NFPA)
- Architects
- Engineers
- Security Consultants
- Insurance Carriers
- Professional Organizations
- Building Owners and Managers Association (BOMA)
- Lobbyists
- End Users (BOMA)
- Representatives of Elevator Industry

Stakeholders

- Code Development Organizations (ICC, NFPA)
- Architects
- Engineers
- Security Consultants
- Insurance Carriers
- Professional Organizations
- Building Owners and Managers Association (BOMA)
- Lobbyists
- End Users (BOMA)
- Representatives of Elevator Industry

Implementation Plan

- NFPA creates a coordinating/correlating committee to align provisions of the NFPA codes and standard library
- NFPA should encourage cross-pollination of ideas between technical committees working on a separate, but related codes/standards
- NFPA establishes better alignment of code cycles
- Solicitation/recruitment of cross-disciplinary professionals to serve on technical committees

Challenges

- Coordination of varying occupancy classes between competing codes and standards
- Code adoption of model codes varies across states, municipalities (including local amendments)
- Cross compatibility of codes in jurisdictions with combination of ICC codes, NFPA codes, and others
- Defining the boundaries of security perimeters (i.e., at enclosed spaces, at entrances, at campus edges)
- Should the concept of life safety be expanded to include security hazards?

Adoption

- Public awareness (e.g., workshops, educational community engagements)
- Building consensus among municipal officials and other policy makers
- Broad marketing campaign (i.e., future National Security Month)
- NFPA articles and training on the need for code compliance that balance safety and security
- International outreach for alternative strategies

Other Issues

- Code Development Organizations (ICC, NFPA)
- Architects
- Engineers
- Security Consultants
- Insurance Carriers
- Professional Organizations
- Building Owners and Managers Association (BOMA)
- Lobbyists
- End Users (BOMA)
- Representatives of Elevator Industry

16
<table>
<thead>
<tr>
<th>Existing Related Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>• ICC Codes</td>
</tr>
<tr>
<td>• NFPA 72- Fire Alarm</td>
</tr>
<tr>
<td>• NFPA 101- Life Safety</td>
</tr>
<tr>
<td>• NFPA 730- Guide for Premise Security</td>
</tr>
<tr>
<td>• NFPA 731- Electronic Premises Security Systems</td>
</tr>
<tr>
<td>• NFPA 3000</td>
</tr>
<tr>
<td>• NFPA Marketing Department</td>
</tr>
<tr>
<td>• NFPA 5000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performance Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Coordinated NFPA code/standard library (long-term) (at a minimum terms/vocabulary)</td>
</tr>
<tr>
<td>• NFPA committees appoint a person to extend information to other technical committees</td>
</tr>
<tr>
<td>• Wider adoption of codes with fewer local amendments (possible metric with ISO Building Code Effectiveness Grading System “BCEGS”)</td>
</tr>
<tr>
<td>• Improving communication channels by engaging cross-disciplinary stakeholders in workshops</td>
</tr>
</tbody>
</table>
Figure 2: Door-Locking Systems

Description: Prevent ad hoc devices from being utilized out of fear/emotional response of the need to “do something.” Keep time-tested, successful proven means of egress methods in place. Keep balance among all codes and standards such as fire, life safety, and accessibility with security needs.

Safety vs. security balance:
- Perception that current code compliant locking devices are inadequate
- Fire door requirements under NFPA 80
- Accessibility
- Egress
- Law Enforcement
- Public need for quick solutions/pressure to “do something”
- Prioritizing desire for more security over other hazardous events

Implementation Plan

Major Tasks
- Educate public/professionals that current code compliant solutions are currently available to secure doors
- Educate public/professionals the dangers of barricade devices/multiple locking devices on doors
- Promote NFPA 730 and NFPA 101 locking methods to protect facilities the right way
- Provide information about how the building codes/standards work together as a whole in an understandable way
- Expand the NASFM recommendation for Classroom Door Security & locking Hardware to become a recommendation for other types of occupancy/building types
- Building partnerships with law enforcement/fire/security/public/related “departments”/facility owners

Challenges
- Education is difficult
- Changing perception is difficult
- Overcoming fear/ignorance/emotional response is difficult
- Coordinate and provide materials and publicize
- Local codes/adoptions overriding national codes/standards

Adoption
- Social media campaigns, ad campaigns, PSAs
- ICC, NFPA, ASIS, Law/Fire, all come together to present united front to reach all spheres of influence

Other Issues

Roles and Responsibilities of Stakeholders
- ICC
- NFPA
- DOJ
- NASFM, IFMA
### Existing Related Resources

- NFPA 101
- IBC
- NFPA 730, NFPA 731
- NASFM
- Accessibility Standards
- The Sandy Hook Advisory Commission
- The Door Security & Safety Foundation

### Performance Targets

- Create a social media campaign resource for each different occupancy types which would include related resources – code references/standards applicable to the occupancy
- Success is when local code adoptions do not violate existing codes/standards. Seeing a stop/reversal to those already adopted
- Seeing this conversation stop
Description: There are no existing codes or standards that integrate security into fire and life safety codes or standards.

Safety vs. security balance: The existing life safety code committees are at max capacity and do not necessarily have the people who are experts in security. A new committee needs to be created where they develop a new document covering coordination of fire, life, and security safety.

### Implementation Plan

#### Major Tasks
- Creating the committee with representatives of all the key stakeholders
- Identify any existing safety documents that can be referenced
- Identify conflicts within existing building and life safety codes
- Develop requirements that are not covered in any other code or standard

#### Challenges
- Existing codes
- Conflict resolution between existing codes and the new document
- Advancement of technology

#### Adoption
- NFPA Standards Council
- Stakeholder buy-in for local adoption/use
- The educating of the public/companies/government to eliminate the “it will never happen to me” concept
- Educating the public that this is a needed document to adopt/reference
- The ANSI Provision Standard procedures
- Training and education

### Other Issues

<table>
<thead>
<tr>
<th>Roles and Responsibilities of Stakeholders</th>
<th>Fire/Building/Law Enforcement/Security professionals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Building owners</td>
</tr>
<tr>
<td></td>
<td>Corporate officials</td>
</tr>
</tbody>
</table>

| Existing Related Resources | The groups that created the reference documents that would be in this document |

<table>
<thead>
<tr>
<th>Performance Targets</th>
<th>Produce a useable, relative document in short time, less than one year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Get the word out that this document is available</td>
</tr>
</tbody>
</table>
**Major Tasks**

- Refine types of detection to provide better information
- Utilize emergency voice communication systems and mass notification where it is currently only traditional notification
- Requiring fire alarm systems for occupancies that don’t typically require such systems
- Minimum security system standard
- Increased communication between Building Management System (BMS) and Fire Alarm system
- Use the technology to activate manually certain systems such as window shades and lights
- Trigger a more advanced system in existing buildings when a building is altered or repaired
- Remove possible barriers from design standards for voluntary upgrade to existing systems
- Allow use of emergency voice communication system for daily announcements

**Challenges**

- Cost and time to develop
- Costs of requiring different notification methods
- Costs of requiring fire alarm systems that are not currently required – for example typical business occupancy or small assemblies
- The education and coordination process to get the stakeholders to the table
- Difficult to implement for existing building or systems
- Concern with using systems for which they were not designed or intended
- Potentially competing or different system protocols that could impair integration to common platform

**Adoption**

- Incentivize these requirements through allowing new methods of initiation or reduced use of pull stations as an example
- Approach insurance industry

---

**Figure 4: Intelligent Fire Alarms**

**Description:** To better utilize fire alarm systems to recognize different incident types and automatically react in specific ways so that broader events can utilize such system. With this technology it will be easier to implement different strategies based upon changing conditions. These strategies may include: defend in place, relocation, partial evacuation, full evacuation (off site/on site). This includes more heavily relying on voice communication and specific messaging.

**Safety vs security balance:** This priority cannot be used in a way where security outweighs the fire safety priority. For example need to be careful in removing current features such as manual pull stations without proper justification.
• Need to pull other stakeholders into the code and standard process such as law enforcement
• Potentially provide as a guideline to better communicate what is already allowed
• Tiered approach to provide increasing levels of protection based on risk or based upon unique needs of a facility
• Communicate opportunity that standard may allow partial upgrade of existing fire alarm systems
• Cost savings where using the fire alarm system to serve some of the security purposes

<table>
<thead>
<tr>
<th>Roles and Responsibilities of Stakeholders</th>
<th>Other Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOMA</td>
<td></td>
</tr>
<tr>
<td>National Association of Home Builders (NAHB)</td>
<td></td>
</tr>
<tr>
<td>Facility management</td>
<td></td>
</tr>
<tr>
<td>Emergency managers</td>
<td></td>
</tr>
<tr>
<td>Standards Development Organizations (SDOs)</td>
<td></td>
</tr>
<tr>
<td>Insurance industry</td>
<td></td>
</tr>
<tr>
<td>Industry from Fire, Security, and Building management</td>
<td></td>
</tr>
<tr>
<td>First responders including law enforcement</td>
<td></td>
</tr>
<tr>
<td>Building and fire code officials</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Existing Related Resources</th>
<th>Performance Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>NFPA 72</td>
<td>Reduce false alarms with more appropriate alarm initiation which will result in more reliability and more confidence in the system</td>
</tr>
<tr>
<td>NFPA 730/NFPA 731</td>
<td>Better communication with building occupants with more customized messages for many different events</td>
</tr>
<tr>
<td>The American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and Underwriters Laboratories (UL) etc BMS standards</td>
<td>Allow the use of new technologies with existing fire alarm system to overall approve functionality</td>
</tr>
<tr>
<td>NASFM</td>
<td>More closely align fire alarm systems to better integrate with security systems in the future</td>
</tr>
<tr>
<td>Unified Facilities Criteria 4-021-01, Design and O&amp;M: Mass Notification Systems</td>
<td>Adoption of code requirements/design standards addressing integration of fire alarm, security, and other incident specific systems/protocol</td>
</tr>
</tbody>
</table>
**Figure 5: Education/Training/Awareness of Life Safety & Security Actions**

**Description:** Training and education is needed to inform stakeholders to allow them to make the right decisions.

**Safety vs. security balance:**
- Leveraging the information currently available, such as NFPA 730/NFPA 731/NFPA 3000/NFPA 101
- Resources
- Leveraging technology
- Unified message
- Collaboration/coordinate community stakeholders

**Implementation Plan**

<table>
<thead>
<tr>
<th>Major Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Collaboration/coordination stakeholders</td>
</tr>
<tr>
<td>• Toolkit with information</td>
</tr>
<tr>
<td>• Training for stakeholders</td>
</tr>
<tr>
<td>• Incentivize training-certification</td>
</tr>
<tr>
<td>• Develop strategic relationships</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Funding</td>
</tr>
<tr>
<td>• Compiling all the information available</td>
</tr>
<tr>
<td>• Identifying key stakeholders</td>
</tr>
<tr>
<td>• Targeted approach to reach stakeholders</td>
</tr>
<tr>
<td>• Measure success</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adoption</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Alliances of industry groups to represent stakeholders</td>
</tr>
<tr>
<td>• Resources- subject matter experts to support effort</td>
</tr>
<tr>
<td>• Consistent messaging among stakeholders</td>
</tr>
<tr>
<td>• Striving for the same goal</td>
</tr>
<tr>
<td>• Leadership</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Government/politicians</td>
</tr>
<tr>
<td>• Industry groups - NFPA, Law enforcement/Fire Agencies, Parent Teacher Associations, Education Departments, etc.</td>
</tr>
<tr>
<td>• Occupancy types</td>
</tr>
</tbody>
</table>
• Public Relations firm/communication efforts

<table>
<thead>
<tr>
<th>Existing Related Resources</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NFPA 1</td>
</tr>
<tr>
<td></td>
<td>NFPA 101</td>
</tr>
<tr>
<td></td>
<td>NFPA 730</td>
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<tr>
<td></td>
<td>NFPA 731</td>
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<tr>
<td></td>
<td>NFPA 3000</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Performance Targets</th>
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<tbody>
<tr>
<td></td>
<td>Social media/digital tools to measure</td>
</tr>
<tr>
<td></td>
<td>Website analytics</td>
</tr>
</tbody>
</table>
**FIGURE 6: SMART FACILITY SAFETY MANAGEMENT**

**Description:** Physical Security systems have moved from a siloed model to fully integrated solutions that tie Video Surveillance, Intrusion Detection, Access Control, environmental sensors, social media, building automation, Building Information Modeling however, Fire/Life Safety systems are typically separate. Keeping unified command in mind, these systems should be interoperable since information from all these systems improve decision making for all stakeholders. These systems need to adhere to a common lexicon and set reasonable practices for cyber hardening of the devices that comprise the total solution.

**Safety vs security balance:** We do not foresee competing goals for security and safety when implementing an integrated solution. We are providing a centralized information management system to improve decision making. There could be specific areas that have conflicts such as Fail Safe or Fail Secure.

### Implementation Plan

<table>
<thead>
<tr>
<th>Major Tasks</th>
<th>Challenges</th>
<th>Adoption</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Value proposition for first responders, building owners, manufacturers, A&amp;E / Consultant</td>
<td>• Siloed systems</td>
<td>• Interoperability / data exchange standards and incorporating them into code: [ONVIF (open industry forum), BACNET (communications protocol for Building Automation and Control networks), HTML (hypertext markup language), HAYSTACK (program intended for network traffic obfuscation and encryption)]</td>
</tr>
<tr>
<td>• Methods of test, certification listings</td>
<td>• Cyber Security / Device hardening</td>
<td>• Fire systems needs to have mirrored information from the physical panel to the virtual one</td>
</tr>
<tr>
<td>• Develop workshop for stakeholders</td>
<td>• Acceptance of NFPA 72 (Shared pathway, Ethernet) by IT (fear of liability)</td>
<td>• Ecosystem capabilities to provide defined solutions</td>
</tr>
</tbody>
</table>

### Other Issues

<table>
<thead>
<tr>
<th>Roles and Responsibilities of Stakeholders</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Code development bodies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Professional and Trade associations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Building owners</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• First Responders (Fire, Law Enforcement and Emergency Medical Services)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Manufacturers</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Existing Related Resources</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• NFPA 730, NFPA 731, NFPA 3000</td>
<td></td>
</tr>
<tr>
<td>• ASHRAE 135 (BACNET)</td>
<td></td>
</tr>
<tr>
<td>• ONVIF, OSDP (Open Supervised Device Protocol)</td>
<td></td>
</tr>
<tr>
<td>Performance Targets</td>
<td></td>
</tr>
<tr>
<td>---------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>• National BIM Standard</td>
<td></td>
</tr>
<tr>
<td>• Institute of Electrical and Electronics Engineers (IEEE)</td>
<td></td>
</tr>
<tr>
<td>• Recognition within codes for the integration</td>
<td></td>
</tr>
</tbody>
</table>
3.2 Occupant Response Sessions

3.2.1 Introduction

The regulatory-themed breakout session on Occupant Response folded in questions about both safety and security, with a focus on operational procedures for building occupants and first responders. Emergency action plans (EAPs) are effective tools for preparing an effective response to such challenging situations. Traditional EAPs have focused on guiding the response of occupants and first responders when safety concerns (such as fire hazards) are present. However, traditional EAPs are being reevaluated in light of growing concerns over building security, as the number of targeted violence events in the United States continues to rise.

The Occupant Response breakout session explored the potential conflict between security and safety. During the session, participants explored the impact of emerging threats on existing protocols, identified challenges that affect the implementation of operational solutions to violent incidents, and proposed long- and short-term solutions for addressing the challenges identified.

3.2.2 Impact to Protocols

During the “Impact to Protocols” discussion, participants described the impacts that targeted violence events have on the execution of safety and security procedures, such as evacuation and lockdown. The discussion allowed participants to reconsider operational protocols and to begin noticing the conflicts that arise between safety codes and standards verses emerging security requirements. Through the discussion, participants identified numerous areas where codes and standards could be improved to better account for security requirements.

In considering the impact of targeted violence events, it became clear that the greatest impacts are on the planning stages for occupant response. Planning therefore requires the most consideration. When an incident occurs, many processes need to be activated quickly. These processes must be defined beforehand.

Participates emphasized that communication is heavily affected by targeted violence events. Currently-employed strategies in buildings for alarms, emergency evacuation procedures, and building signage all help to facilitate evacuation, but these strategies are ineffective for lockdown and shelter-in-place scenarios. There is a need for more sophisticated methods to communicate relevant information to building occupants, in accordance with the threat being presented.

Table 4 lists the impacts of targeted events that participants identified during the discussion.

<table>
<thead>
<tr>
<th>The Impact of Targeted Violence Events on Occupant and First Responder Protocols</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Signage</strong></td>
</tr>
<tr>
<td>o Signage: where do I go? Fire exits, etc.</td>
</tr>
<tr>
<td>o Secured areas in all buildings (identified)</td>
</tr>
<tr>
<td>o Signage that is relevant to evolving threats</td>
</tr>
<tr>
<td><strong>Codes</strong></td>
</tr>
<tr>
<td>o “Codes” are not as useful in public settings</td>
</tr>
<tr>
<td>o Add lockdown / lockout drill requirements to NFPA 1, NFPA 101, and other codes</td>
</tr>
<tr>
<td><strong>Education</strong></td>
</tr>
</tbody>
</table>
The Impact of Targeted Violence Events on Occupant and First Responder Protocols

- Policy and education on shelter-in-place or exit
- Clarity and consistency in messaging
- Run, hide, fight
- Public education for JUMP!

- Identification
  - ID the threat
  - Detection: automation and alert

- Communication
  - Two-way communication
  - Communications: signal/alarm, voice direction, social media, coordination w/ law enforcement
  - Secondary alert system
  - Reliable textual and trained primary and secondary communications
  - How is the lockdown communicated?
  - Messaging, differentiating between lockdown, all-clear, and dangers other than fire

- Situational Awareness
  - Are policies and procedures known?
  - Situational awareness: aware of your surroundings
  - Situational awareness tools
  - Critical thinking: situational awareness; communication

- Planning
  - An integrated, trained, exercised, coordinated plan
  - Is there someone in charge? (chain of command)
  - Chain of command: who can determine a lockdown situation?
  - Who has authority for activating and deactivating lockdown?
  - Decision protocol: move or stay in place
  - Ability to move people, and to do so quickly
  - Pre-planning: command structure, occupant mobility, drills, etc.
  - Emergency operations plans: training plans, mandated and structured

- Other Considerations
  - Building systems info: electrical, elevator, lighting, etc; communication tools, floor plans and occupant data, safe location identification

3.2.3 Challenges to Implementing Operational Solutions in Response to a Targeted Violence Event

During the “Challenges” discussion, participants described the challenges that emerge when operational solutions are implemented during a targeted violence incident. A few items quickly rose in importance during the conversation: situational awareness, procedural understanding, and risks.

Situational awareness: Participants stressed the importance of situational awareness during targeted violence events. This can have different meanings to various stakeholders during an incident. Building occupants, for instance, will want to know the type of threat that is present, the proper response to take, and the safe areas within a facility that can be used for shelter or evacuation. Law enforcement will want to know the number, location, and description of the assailant(s) and the method by which they are enacting violence. Emergency medical services (EMS) will want to know the location of all individuals requiring medical assistance and their health status. In all cases, situational awareness involves gathering and communicating relevant information to those who need it. This can be difficult when conflicting, incomplete information
emerges, and there is often uncertainty as to which information sources (e.g., early news reports, information collected from social media) can be deemed accurate or trusted. Available information may be vague or irrelevant to those who encounter it.

**Procedural understanding:** To maximize the effectiveness of incident response, every stakeholder must know the proper way to respond and must take appropriate action. However, there is rarely such an across-the-board level of awareness, especially in buildings that are open-access, or open to the public. In private access and secure buildings, occupants may be trained and may partake in regular drills. These precautions may not be implemented practically in all public spaces. A lack of public training was identified as a significant challenge to implementing operational procedures in specific types of occupancies. Even when training has been provided, the overwhelming physiological response that occurs during violent events can deter well-trained individuals from taking appropriate action during emergencies.

**Risks:** Participants identified a number of risks that challenge the implementation of strict operational solutions during targeted violence events. The topic of liability rose prominently in the discussion. Participants noted that concerns over liability may hinder individuals from making appropriate decisions when needed. Building owners risk their reputations when taking any action, and some actions are in conflict with owners’ interests. Building occupants, especially those without explicit training, may not be best equipped to take action and may refuse any responsibilities. A range of expectations influence stakeholder decision-making, introducing novel challenges in managing occupant response.

Table 5 lists the challenges that participants identified during the discussion.

Table 5: Challenges to implementing operational solutions

<table>
<thead>
<tr>
<th>Challenges when trying to implement operational solutions in response to a targeted violence event</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Siloed planning: lack of coordination</td>
</tr>
<tr>
<td>◦ Silos</td>
</tr>
<tr>
<td>◦ Cost: for pre-planning, drills, etc.</td>
</tr>
<tr>
<td>◦ Developing a dynamic plan</td>
</tr>
<tr>
<td>◦ Priorities: finite time, money, resources, attention span</td>
</tr>
<tr>
<td>• Situational Awareness</td>
</tr>
<tr>
<td>◦ Situational awareness; real-time and factual information</td>
</tr>
<tr>
<td>◦ Knowledge of incident details: unknown or vague</td>
</tr>
<tr>
<td>◦ First responders identifying buildings / structures quickly, to locate suspect(s)</td>
</tr>
<tr>
<td>◦ Communication between agencies and building staff</td>
</tr>
<tr>
<td>◦ Conflicting guidance</td>
</tr>
<tr>
<td>◦ Getting specific, relevant information to dispatch to first responders as quickly as possible (i.e. shooter in cafeteria) – seconds matter when saving lives</td>
</tr>
<tr>
<td>◦ Monitor social media during event</td>
</tr>
<tr>
<td>• Accountability</td>
</tr>
<tr>
<td>◦ Accurate occupancy / accountability</td>
</tr>
<tr>
<td>◦ Accountability of employees</td>
</tr>
<tr>
<td>◦ Post incident review – media criticism - liability</td>
</tr>
<tr>
<td>◦ Hold local law enforcement responsible for oversight of plan</td>
</tr>
<tr>
<td>• Chain of command</td>
</tr>
<tr>
<td>◦ Established chain of command</td>
</tr>
<tr>
<td>◦ Roles: Does each person know their role? Is the role respected and at the table?</td>
</tr>
</tbody>
</table>
Challenges when trying to implement operational solutions in response to a targeted violence event

- Ownership of response
- Span of control: incident command structure, first responders
- Who do you trust?

**Risks**
- Ego
- Reputational risk for building owners
- Public expectations
- Acknowledge role; prepare for role; right to refuse role; role redundancy
- Need for resolute leadership; the involvement of lawyers; liability
- Cover your assets; liability
- Balancing time and cost in operations between fire safety and security against intentional violence
- Being experts

**Correct Understanding of What to Do**
- Lack of public training
- Was training adequate for the situation?
- Reality vs. training (World Trade Center floor warden example from 1993)
- Training and exercises
- Resistance to training
- Continuity of procedures
- Difficulty in pre-planning for ‘transient’ occupancies
- Educating occupants on their risk and how to mitigate (i.e. bars on the windows, what you should do)

**Communicating Relevant Information**
- An integrated, trained, exercised, coordinated plan
- Is there someone in charge? (Chain of command-who is in charge before arrival of first responders?)
- Chain of command: Who can determine a lockdown situation?
- Who has authority for activating and deactivating lockdown?

3.2.4 Short-Term Solutions for Improving Response Protocols

During the “Solutions” discussion, participants described potential short-term solutions to the challenges identified above.

Standards for interoperability have the potential for a positive impact on occupant response procedures in the near term. Interoperability can refer to a number of different aspects of incident response planning. Participants noted a few potential areas in which interoperability can bring about improvements. One area involves the language and protocols used by firefighters, EMS, and law enforcement officers. Using consistent nomenclature for referring to the structure, layout, and features of buildings and campuses can aid first responders in coordinating their response efforts.

Interoperability can also refer to the technology and interfaces used in communications systems for incident response. Alarm systems, notification systems, radio systems, cell phone networks, social media sites, and other communication channels may all be used to collect or convey information during a targeted violence incident. Each is limited in the type of information it can convey and who can access the information. These networks are often discrete and cannot effectively interface with one another, which hinders response efforts.
Participants stressed the need for the development of a holistic security curriculum to provide educators with training on best practices. It was suggested that this curriculum become a required part of the educator certification and continuing education process. Consistent security training would help prepare educators to respond to violent incidents.

Though schools have been predominant targets for violence events in the past, other building types have increasingly become targets in recent years. For this reason, a training curriculum that includes education for facility managers, architects, and engineers may result in novel building element designs that provide inherent protection against threats. Providing training in the short term is one of the best ways to make an impact in the long term.

Participants stressed the need to nationalize the “Run, Hide, Fight” campaign. This educational campaign could increase awareness within the general public, ensuring that future citizens are more prepared to react to violent incidents, especially in public spaces where incident response planning is most difficult.

The NFPA 3000 standard contains valuable tools for emergency operations planning for first responders. The standard has been recently released and will require strong marketing and communications to enhance its effectiveness.

A simple solution that can help to increase situational awareness and response efforts involves directly tying threat alert systems into law enforcement notification channels. In this manner, when an incident initiates, law enforcement officials can quickly receive relevant information.

Participants suggested the creation of standard templates for emergency operations plans that can be modified and adopted by facilities of different types. Teachers, in general, tend to look to law enforcement to provide a template that can be used in their facilities. Participants remarked that facility owners or occupants should not be relied on to develop a template or plan by themselves. Most facilities lack personnel with a high level of specialization in building security planning. In addition to the development of a template, participants remarked that building stakeholders would also benefit from the availability of an implementation strategy, which would allow them begin completing these templates at their facility. At some point, the implementation of emergency operations plans should be mandated by standards or regulations.

Table 6 lists all of the short-term solutions that were identified by participants during the discussion. The number within parentheses next to many of the inputs are an indicator of how many votes that idea received as a priority solution. Following Table 7 in section 2.2.6, additional information is provided on the priority solutions and how they were established.

Table 6: Short-term solutions for improving response protocols during a targeted violence event

<table>
<thead>
<tr>
<th>Short-Term Solutions for Improving Response Protocols</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Mandated planning and drills (5)</td>
</tr>
<tr>
<td>• Drill-drill-drill</td>
</tr>
<tr>
<td>• Drills and training</td>
</tr>
<tr>
<td>• Standardized training for responders (3)</td>
</tr>
<tr>
<td>• Update the fire service school education program (2)</td>
</tr>
<tr>
<td>• National campaign for run, hide, fight (9)</td>
</tr>
</tbody>
</table>
### Short-Term Solutions for Improving Response Protocols

- Workforce based training (like fire safety education for working adults)
- Emergence leadership guidance/training for building managers, including school principals (2)
- EAP to include hostile events (1)
- All reasonably foreseeable hazard plans (1)
- All hazards plans (1)
- Keep it simple stupid (KISS)
- Community: awareness, involvement, training
- Research behavior in actual incident, then design solutions for what people do, not what you want them to do (4)
- Adopt national guidelines (PASS guidelines) (4)
- Get states to set standards for school security (1)
- PASSK12.ORG (Partner Alliance for Safer Schools)
- NFPA 3000 (8)
- Evacuation map with address, contact number, direction indicator, and building ID by the door (2)
- Procedures built on experience; research from actual events
- Remove manual pull stations from public spaces; keep in supervised location (3)
- Threat alert system immediately notifies law enforcement (7)
- Require two-way communications in all rooms: one channel for 1st responders
- Interoperability (12)
- Unified command (fire, ems, etc.)
- K-12 see something curriculum
- Teacher curriculum on security; architects and engineers as well (11)
- Principle based standard operating procedures

#### 3.2.5 Long-Term Solutions and Radical Approaches

After identifying short-term solutions, participants focused on long-term solutions that can radically change occupant responses in the future.

**Lockdown:** Workshop participants envisioned a future in which a central command system could initiate a lockdown, actuate monitoring systems, and communicate relevant information to building occupants and first responders. Careful design would be needed to ensure that such a system could not be misused.

**Integrated building management systems:** Participants also suggested that future buildings should have integrated building management systems that include security functions. These systems would provide a remote monitoring team with building-wide visibility, when needed, and would allow the team to perform security functions, such as locking and un-locking doors and redirecting the flow of people and communications within a building.

**Independent government agency:** Participants supported the establishment of an independent government agency charged with determining the causes and contributing factors for violent incidents and promoting building security. All agreed that such an organization could most efficiently and effectively gather and analyze data from targeted violence incidents, resulting in a better knowledge base for strategy and planning. This agency would be analogous to the National Transportation Safety Board (NTSB) but would focus on building security. When
targeted violence incidents occur, the agency would investigate, document, analyze, and publish its findings. A focused organization, with a clear purpose and dedicated resources, would provide clear insight and allow for the development of effective prevention methods and response procedures.

**Drills and training:** Another simple yet often overlooked solution involved mandating emergency drills and training at educational facilities and other private institutions. In the same way that mandates exist for fire drills, lockdown, active shooter, and shelter-in-place, drills could be mandated at a specified frequency (e.g. quarterly, annually). One suggested solution involved mandating one drill per month, while changing the focus of the drill on a monthly basis. Drills would rotate between focusing on fires, lockdowns, and other important topics. Updates to life safety and fire codes could be a mechanism for introducing these mandated drills.

Table 7 lists the long-term solutions that were identified by participants during the discussion. The number within parentheses next to many of the inputs are an indicator of how many votes that idea received as a priority solution.

**Table 7: Long-term solutions for improving response protocols during a targeted violence event**

<table>
<thead>
<tr>
<th>Long-Term Solutions/Radical Approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Mandatory multi-disciplinary crisis planning team (3)</td>
</tr>
<tr>
<td>• A liquid, slimy sticky material that can be deployed at suspect to stop movement and operation of weapons</td>
</tr>
<tr>
<td>• Knowledge: integrated background / social / mental / weapon and law enforcement data</td>
</tr>
<tr>
<td>• Armed and trained teachers</td>
</tr>
<tr>
<td>• Artificial Intelligence (1)</td>
</tr>
<tr>
<td>• Robotics</td>
</tr>
<tr>
<td>• Pre-hospital and hospital advancement stop the bleed kits</td>
</tr>
<tr>
<td>• Shift in discussion around liability (1)</td>
</tr>
<tr>
<td>• Force fields</td>
</tr>
<tr>
<td>• Dedicated stream of funding</td>
</tr>
<tr>
<td>• Address liability concerns; fix shield to promote risk assessment</td>
</tr>
<tr>
<td>• Addressable FA speakers in each room; simple system to provide targeted messages to rooms (5)</td>
</tr>
<tr>
<td>• Internet protocol video for each room (2)</td>
</tr>
<tr>
<td>• Color coded lights (1)</td>
</tr>
<tr>
<td>• An alarm that indicates whether to evacuate or shelter in place (1)</td>
</tr>
<tr>
<td>• NTSB equivalent for active shooter (6)</td>
</tr>
<tr>
<td>• Broadband (1)</td>
</tr>
<tr>
<td>• Systems integration for fire, security, suppression, etc (1)</td>
</tr>
<tr>
<td>• One button alert, lockdown, monitor, communicate prompts (9)</td>
</tr>
<tr>
<td>• Tie – tech platform; building automation, scheduling, life safety, security</td>
</tr>
<tr>
<td>• Total integrated building remote connectivity (6)</td>
</tr>
<tr>
<td>• Facial recognition technology</td>
</tr>
<tr>
<td>• Notification technology and geofencing (1)</td>
</tr>
<tr>
<td>• Clarity and consistency in messaging</td>
</tr>
<tr>
<td>• Public education for Jump!</td>
</tr>
</tbody>
</table>
3.2.6 Occupant Response Prioritization

The breakout session ended with a vote to prioritize the short- and long-term solutions discussed. Participants voted in response to the following question with the results listed below:

- When considering operational protocol solutions to either improve or develop, what are the top four short term, and top two long term ideas that could remedy the conflict that exists between emergency operational design features and recommended actions while also significantly improving occupant safety during a targeted violence event?

**Short-Term Solutions**

- **NFPA 3000**
  - The solution seeks to draw from the planning and assessment tools made available through the NFPA 3000 Standard to improve the response capabilities of law enforcement, fire and EMS providers in the context of the broader communities in which they service.
  - Implementation of the standard provides an opportunity for building owners to interface and coordinate with other community stakeholders, including law enforcement, the private security industry, and other local leaders and decision makers.

**Long-Term Solutions**

- **NTSB for active shooter incidents or targeted violence events**
  - Recommend creation of a new federal entity [similar to National Institute for Occupational Safety and Health (NIOSH), NTSB, U.S. Chemical Safety and Hazard Investigation Board (CSB), National Construction Safety Team Act (NCSTA), could be under Center for Disease Control (CDC)]. When an event occurs that fits the criteria, a team is assembled and dispatched to review the incident, investigate the response, review data, and provide a report in a consistent format. The team would also provide recommendations toward determining best practices.

- **Interoperability**
  - Ensure that communications systems, early warning systems, and hardware used by first responders of differ disciplines and different jurisdictions work together.
  - Address challenges presented by cost and competition amongst service providers.
  - Enable public and private entities to work seamlessly without violating privacy or security standards (i.e., giving first responders access to privately owned camera systems, intercom systems, and automated locking systems).

- **Teacher curriculum on security**
  - Develop a standard Citizen Response to Active Threat Engagement (CRATE) curriculum for educator certification and continuing education. The response curriculum would cover reasonably foreseeable threats.
  - Implement the curriculum as standard in all schools (public, private charter schools, etc.) to enhance both individual and organizational safety.
Cover how to gain situational awareness and make correct decisions based off the known threat at the time. All individuals, wherever they are located in reference to the known threat, should be able to assess the best course of action, given what is known at that time.

Address the possible issue of competing goals, which might arise if a fire alarm is activated during an intentional attack.

- **National campaign for Run, Hide, Fight**
  - Consistency
  - Provision to every citizen of knowledge and tools for proper response
  - Preparedness

### 3.2.7 Occupant Response Action Plans

Following the prioritization, Occupant Response participants broke into six smaller groups—one for each prioritized solution noted above—to develop specific action plans for those solutions. The smaller groups were provided with worksheets to guide their output. Figures 7-11 below show the content of the Occupant Response group’s worksheets.


**Figure 7: Teacher Curriculum on Security**

**Description:** Create a standard Citizen Response to Active Threat Engagement (CRATE) curriculum for educator certification and continuing education. The curriculum would be taught to enhance both individual and organizational safety, plus be taught as standard curriculum in all schools (public, private charter schools, etc.).

**Safety vs security balance:** The response curriculum covers reasonably foreseeable threats. Each individual, wherever they are located in reference to the known threat, should assess the best course of action for them given what is known at that time. The only time an issue of competing goals might arise are when, during an intentional attack, a fire alarm is activated. The curriculum would cover how to gain situational awareness and make correct decisions based off the known threat at the time.

---

**Implementation Plan**

<table>
<thead>
<tr>
<th>Major Tasks</th>
<th>Challenges</th>
<th>Adoption</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Develop comprehensive curriculum for and in conjunction with educational institutions</td>
<td>• Create curriculum that broadly addresses all concerns in all types of communities across the nation, but still allows for flexibility in delivery.</td>
<td>• Buy-in from multiple organizations including educational, law enforcement, EMS, Fire and governmental entities</td>
</tr>
<tr>
<td>• Gain acceptance by all national educator credentialing organizations and/or the Department of Education</td>
<td>• This is a major paradigm shift in education. The mindset associated with this type of curriculum isn’t pervasive among the educational community</td>
<td>• Be featured in Campus Safety ENews and other school safety programs and safety organizations.</td>
</tr>
<tr>
<td>• Push legislation across all states to mandate the curriculum be implemented in all educational institutions</td>
<td>• Gaining political and organizational traction in all states to qualify this as a true national program</td>
<td>• A Standard training curriculum</td>
</tr>
</tbody>
</table>

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**Other Issues**

<table>
<thead>
<tr>
<th>Roles and Responsibilities of Stakeholders</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>• NFPA for establishing code</td>
<td></td>
</tr>
<tr>
<td>• Committee members from first responders and education community</td>
<td></td>
</tr>
<tr>
<td>• Federal, State and municipal support</td>
<td></td>
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<tr>
<td>• Advanced Law Enforcement Rapid Response Training (ALERRT)</td>
<td></td>
</tr>
</tbody>
</table>

36
### Existing Related Resources

- NFPA 101, NFPA 730, NFPA 731, NFPA 3000
- Advanced Law Enforcement Rapid Response Training
- Los Angeles Police Department “Seconds Count” Program
- Department of Homeland Security (DHS) Run, Hide, Fight

### Performance Targets

- National acceptance/adaptation
- National paradigm shift in individual and organizational safety and response
- Possibly reduce the number of incidents annually
- Casualty mitigation for incidents that do occur
**FIGURE 8: INTEROPERABILITY**

**Description:** Ensuring that communications systems, early warning systems, and hardware used by first responders of different disciplines and different jurisdictions work together.

**Safety vs security balance:**
- Cost and competition amongst service providers
- Public and private entities being able to work seamlessly without violating privacy or security standards (i.e. giving first responders access to privately owned camera systems, intercom systems, and automated locking systems)

### Implementation Plan

| Major Tasks | • Develop an interoperability standard for equipment and software used in emergency response incidents  
• Develop legislation and regulations to support the adoption of the latest edition of NFPA 3000 along with the Life Safety Code and all other applicable codes |
| Challenges | • Training and education  
• Getting every state to adopt/implement the NFPA 3000 standard  
• Understanding the legislative process in each State  
• Educating local officials on the standard and its importance |
| Adoption | • Getting all the key stakeholders on board with the importance of the standard  
• Creating a Public Relations campaign that educates the community about risk  
• Grassroots media campaign |

### Other Issues

| Roles and Responsibilities of Stakeholders | • If adopted into law State Fire Marshalls or local inspectors must ensure that new codes on interoperability are enforced  
• Building code officials must enforce the applicable codes  
• All facility managers including but not limited to school administrators, facility operators, major event managers must work with first responders to ensure their systems are interoperable |
| Existing Related Resources | • Ensuring that all existing systems can be upgraded to be adaptable and interoperable  
• Applying existing NFPA standards, and building codes that can be applied to improving interoperability |
| Performance Targets | • Communications between police, fire, EMS and facility managers work interoperable and seamlessly  
• Security and automated locking systems used by private entities are easily accessible to first responders |
**Figure 9: NFPA 3000**

**Description:** Implementation and use of the standard and methods to incorporate its capabilities and needs into an overall community’s planning and response program.

**Safety vs security balance:** From a planning and response aspect, the need for first responder agencies to utilize NFPA 3000 content based on their jurisdictional needs. Develop and exercise planning scenarios to subdue the perpetrator of a hostile event and provide medical care.

<table>
<thead>
<tr>
<th>Implementation Plan</th>
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</thead>
<tbody>
<tr>
<td><strong>Major Tasks</strong></td>
</tr>
<tr>
<td>• Increase awareness through education</td>
</tr>
<tr>
<td>• Find creative ways to get law enforcement to comply</td>
</tr>
<tr>
<td>• Educate the private security industry</td>
</tr>
<tr>
<td>• Getting information to major elected leaders and decision makers</td>
</tr>
<tr>
<td><strong>Challenges</strong></td>
</tr>
<tr>
<td>• Getting law enforcement, including its different branches (campus police, parks police, school district police, etc.) to comply</td>
</tr>
<tr>
<td>• Accessing private security personnel both contract and in-house (proprietary)</td>
</tr>
<tr>
<td>• Getting building/facility owners and operators to comply</td>
</tr>
<tr>
<td><strong>Adoption</strong></td>
</tr>
<tr>
<td>• Getting the previously-mentioned groups to comply</td>
</tr>
<tr>
<td>• High level presentations to large organizations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Roles and Responsibilities of Stakeholders</strong></td>
</tr>
<tr>
<td>• All participating organizations</td>
</tr>
<tr>
<td>• All leaders and decision-makers</td>
</tr>
<tr>
<td>• People already impacted by a hostile event</td>
</tr>
<tr>
<td><strong>Existing Related Resources</strong></td>
</tr>
<tr>
<td>• NFPA 1, NFPA 72, NFPA 99, NFPA 101, NFPA 730, NFPA 731, NFPA 1500, NFPA 1561, NFPA 1600, NFPA 1616, NFPA 1620, NFPA 5000. First responders need to have fundamental knowledge of built environment requirements and EAP requirements.</td>
</tr>
<tr>
<td>• DHS Whitepaper; DOJ Active Shooter, ALERT; ALICE; IAB; IACP; IFF; HARTFORD CONSENSUS; NAMT; PHTLS;</td>
</tr>
<tr>
<td>• ASIS Workplace Violence Prevention and Intervention Standard, ASIS General Security Risk Assessment Guideline</td>
</tr>
<tr>
<td><strong>Performance Targets</strong></td>
</tr>
<tr>
<td>• Difficult because it is a new program</td>
</tr>
<tr>
<td>• High level presentations to large organizations</td>
</tr>
<tr>
<td>• Multiple pieces-jurisdictions determine what parts of NFPA 3000 apply</td>
</tr>
</tbody>
</table>
**FIGURE 10: NTSB FOR ACTIVE SHOOTER INCIDENTS OR TARGETED VIOLENCE EVENTS**

**Description:** Recommend creation of a new federal entity (similar to NIOSH, NTSB, CSB, NCSTA. Could be under CDC). When event occurs that fits criteria, team is assembled and dispatched to review the incident, investigate the response, review data, provide report in a consistent format and provide recommendations toward creating best practices.

**Safety vs security balance:** None

**Implementation Plan**

<table>
<thead>
<tr>
<th>Major Tasks</th>
<th>Challenges</th>
<th>Adoption</th>
<th>Other Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Funding effort to create agency</td>
<td>• Funding effort</td>
<td>• Funding effort to create agency</td>
<td>• Relevant first responder agencies</td>
</tr>
<tr>
<td>• Analyze history/experiences of relevant similar agencies and incidents</td>
<td>• Identify and Requisite buy – in from stakeholders</td>
<td></td>
<td>• Representatives from potential targets of violence</td>
</tr>
<tr>
<td>• Identify and Requisite buy – in from stakeholders</td>
<td>• Type of agency: least threatening or storm trooper</td>
<td></td>
<td>• Federal agencies</td>
</tr>
<tr>
<td>• Legislative authorization and funding</td>
<td>• Inside agency (CDC) or independent (NTSB model)</td>
<td></td>
<td>• State and local government organizations</td>
</tr>
<tr>
<td>• Identify home (i.e., NIOSH Firefighter line of duty death or NTSB)</td>
<td>• Interagency cooperation (federal and local)</td>
<td></td>
<td>• Existing agencies such as NIOSH, NTSB, CSB, NCSTA, CDC</td>
</tr>
<tr>
<td>• Compelling interagency cooperation (federal and local)</td>
<td>• Politics of a Legislative authorization and funding</td>
<td></td>
<td>• Existing incident reports and commission reports</td>
</tr>
<tr>
<td></td>
<td>• Legal rights</td>
<td></td>
<td>• Identify other efforts</td>
</tr>
<tr>
<td></td>
<td>• Create a bi-partisan effort in a toxic environment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Performance Targets

- Create working group to raise resources and lead effort within 3 months
- Generate necessary core resources within 3 months

**FIGURE 11: RUN, HIDE, FIGHT NATIONAL CAMPAIGN**

**Description:**
- Consistency
- Every citizen knows how to respond and has the tools
- Preparedness

**Safety vs security balance:**
- Any liability from somebody following this advice and being killed
- Critical thinking is necessary – risk to safety in making the wrong decision
- No notification of others is built into this.
- No calling for help

**Implementation Plan**

**Major Tasks**
- Discussion with major stakeholders on terminology
- Who will be national owner/sponsor
- Partnership with local law enforcement for delivery

**Challenges**
- Challenge of language “barricade” “confront” is too hard for young kids. The word “fight” is controversial in schools
- How to determine who the “owner” of this will be?
- Funding and marketing
- Fear about discussing shooting with children
- Run, Hide, Fight is not a 3-step process (like Stop, Drop and Roll)

**Adoption**
- Needs to be incorporated into curriculum (like Stop, Drop and Roll was popularized by Dick Van Dyke, then incorporated)
- The Rock
- PSA, infographic, easily accessible material
- Multiple languages - which ones?

**Other Issues**

**Roles and Responsibilities of Stakeholders**
- Partnership-Law Enforcement, NFPA, Federal Bureau of Investigation (FBI), Teacher’s Union
- Research on effectiveness of “Run, Hide, Fight”

**Existing Related Resources**
- Research Paper on “Stop, Drop, and Roll” - The Technical Substantiation Behind Public Fire Safety Messaging
### Performance Targets

- Any statistics in surviving through these actions?
- Do Active Shooter victim statistics decrease?
- How many YouTube hits or downloads recorded for PSA or supporting documentation
- Reporting from schools on implementation. Developing key performance indicators (KPIs)
Appendix A. Workshop Participants

The following individuals participated in the NFPA Building Safety and Security Workshop, representing the organizations shown below.

Steven Adelman
Adelman Law Group, PLLC

Suzanne Alfano
National Electrical Manufacturers Association

Muhammad Ali
National Electrical Manufacturers Association

Chad Beebe
American Society for Healthcare Engineering

John Bernhards
Association of Physical Plant Administrators

Paul Brooks
Department of Homeland Security

David Bryson
US Department of Transportation

Robert Boyd
Secure School Alliance

Ken Bush
Maryland State Fire Marshals Office

Helene Bushwick
US Department of Justice

Ryan Colker
National Institute of Building Sciences

Geoff Craighead
Allied Universal

John Curnutt
TX State University – ALERRT

Charles “Sean” Dinse
Los Angeles Police Department Topanga Division

Ken Desmond
National Volunteer Fire Council

Rita Fahy
NFPA

Daniel Finnegan
Siemens Industry, Inc.

David Frable
US General Services Administration

Christopher Fritts
World Bank

Max Gandy
The Church of Jesus Christ of Latter-day Saints

Jennifer Gerber
Dormakaba Americas – Rep. Door and Hardware Institute

Joshua Greene
JENSEN HUGHES

Natalie Hammond
Reddding Elementary School

Calvin Hodnett
US Department of Justice
Randall Hormann  
*Automatic Fire Alarm Association*

Meghan Housewright  
*NFPA*

Bruce E. Johnson  
*Underwriters Laboratories*

Andrew Kollar  
*American Institute of Architects*

John Maguire  
*Underwriters Laboratories*

James Marcella  
*Security Industry Association*

John Montes  
*NFPA*

Wendy Niles  
*Florida Fire Marshal’s and Inspectors Association*

Richard Onofrio  
*Shooter Detection Systems*

Larry Petrick  
*International Association of Fire Fighters*

Rich Reidy  
*Siemens Industry, Inc.*

Kevin Sehlmeyer  
*MI Office of the State Fire Marshal*

James Simpson  
*Electrical Training Alliance*

Richard Smith  
*International Association of Chiefs of Police*

Maria Pia Tamburri  
*Allegion PLC*

Emmanuel Taylor  
*Energetics*

Jacob Terrell  
*National Association of Counties*

Michael Tierney  
*Builders Hardware Manufacturers Association*

Joseph Trainor  
*University of Delaware*

Beth Tubbs  
*International Code Council*

Jeffrey Tubbs  
*ARUP*

Robert Upson  
*National Fire Sprinkler Association*

Peter Willse  
*Global Asset Protection Services, LLC*

Walt Zalis  
*Energetics*
Appendix B. Related Codes and Documents

The following NFPA codes relate to the topics discussed during the workshop. This is a sampling of the existing door locking provisions as well as recent enhancements/changes made as a result of the 2014 Workshop on School Safety, Codes and Security.

Provisions for Automatic Door Unlocking by Fire Alarm Activation

<table>
<thead>
<tr>
<th>Paragraph Number</th>
<th>Code Text</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.2.1.5.8</td>
<td>Every door assembly in a stair enclosure serving more than four stories, unless permitted by 7.2.1.5.8.2, shall meet one of the following conditions:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1) Re-entry from the stair enclosure to the interior of the building shall be provided.</td>
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<tr>
<td></td>
<td>(2) An automatic release that is actuated with the initiation of the building fire alarm system shall be provided to unlock all stair enclosure door assemblies to allow re-entry.</td>
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<tr>
<td></td>
<td>(3) Selected re-entry shall be provided in accordance with 7.2.1.5.8.1.</td>
<td></td>
</tr>
<tr>
<td>7.2.6.1.1</td>
<td>Approved, delayed-egress electrical locking systems shall be permitted to be installed on door assemblies serving low- and ordinary-hazard contents in buildings protected throughout by an approved, supervised automatic fire detection system in accordance with Section 9.6 or an approved, supervised automatic sprinkler system in accordance with Section 9.7, and where permitted in Chapters 11 through 43, provided that all of the following criteria are met:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1) The delay of the delayed-egress electrical locking system shall deactivate allowing unobstructed egress upon actuation of one of the following:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(a) Approved, supervised automatic sprinkler system in accordance with Section 9.7</td>
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<tr>
<td></td>
<td>(b) Not more than one heat detector of an approved, supervised automatic fire detection system in accordance with Section 9.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c) Not more than two smoke detectors of an approved, supervised automatic fire detection system in accordance with Section 9.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2) The delay of the delayed-egress electrical locking system shall deactivate allowing unobstructed egress upon loss of power controlling the lock or locking mechanism.</td>
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<tr>
<td></td>
<td>(3)* An irreversible process shall release the electrical lock in the direction of egress within 15 seconds, or 30 seconds where approved by the authority having jurisdiction, upon application of a force to the release device required in 7.2.1.5.10 under all of the following conditions:</td>
<td></td>
</tr>
</tbody>
</table>
| 7.2.1.6.2 | Sensor-Release of Electrical Locking Systems. Where permitted in Chapters 11 through 43, door assemblies in the means of egress shall be permitted to be equipped with sensor-release electrical locking system hardware provided that all of the following criteria are met:

1. A sensor shall be provided on the egress side, arranged to electrically unlock the door leaf in the direction of egress upon detection of an approaching occupant.

2. Door leaves shall automatically electrically unlock in the direction of egress upon loss of power to the sensor or to the part of the locking system that electrically locks the door leaves.

3. Door locks shall be arranged to electrically unlock in the direction of egress from a manual release device complying with all of the following criteria:
   
   a. The manual release device shall be located on the egress side, 40 in. to 48 in. (1015 mm to 1220 mm) vertically above the floor, and within 60 in. (1525 mm) of the secured door openings, except as otherwise permitted by 7.2.1.6.2(3)(c).

   b. The requirement of 7.2.1.6.2(3)(a) to locate the manual release device within 60 in. (1525 mm) of the secured door opening shall not apply to previously approved existing installations.

   c. The manual release device shall be readily accessible and clearly identified by a sign that reads as follows: PUSH TO EXIT. |

Formerly “access-controlled egress door assemblies,” required to automatically unlock in the direction of egress on fire alarm system activation by other than manual fire alarm boxes where a fire alarm system is present.
(d) When operated, the manual release device shall result in direct interruption of power to the electrical lock — independent of the locking system electronics — and the lock shall remain unlocked for not less than 30 seconds.

(4) Activation of the building fire-protective signaling system, if provided, shall automatically electrically unlock the door leaves in the direction of egress, and the door leaves shall remain electrically unlocked until the fire-protective signaling system has been manually reset.

(5) The activation of manual fire alarm boxes that activate the building fire-protective signaling system specified in 7.2.1.6.2(4) shall not be required to unlock the door leaves.

(6) Activation of the building automatic sprinkler or fire detection system, if provided, shall automatically electrically unlock the door leaves in the direction of egress, and the door leaves shall remain electrically unlocked until the fire-protective signaling system has been manually reset.

(7) The egress side of sensor-release electrically locked egress doors, other than existing sensor-release electrically locked egress doors, shall be provided with emergency lighting in accordance with Section 7.9.

(8) Hardware for new installations shall be listed in accordance with ANSI/UL 294, Standard for Access Control System Units.

| 7.2.1.6.3 | Elevator Lobby Exit Access Door Assemblies Locking. Where permitted in Chapters 11 through 43, door assemblies separating the elevator lobby from the exit access required by 7.4.1.6.1 shall be permitted to be electrically locked, provided that all the following criteria are met:

(1) The electrical locking hardware is listed in accordance with ANSI/UL 294, Standard for Access Control System Units.

(2) The building is protected throughout by a fire alarm system in accordance with Section 9.6.

(3) The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

(4) Waterflow in the sprinkler system required by 7.2.1.6.3(3) is arranged to initiate the building fire alarm system.

(5) The elevator lobby is protected by an approved, supervised smoke detection system in accordance with Section 9.6.

(6) Detection of smoke by the detection system required by 7.2.1.6.3(5) is arranged to initiate the building fire alarm system and notify building occupants.

(7) Initiation of the building fire alarm system by other than manual fire alarm boxes unlocks the electrical locks on the elevator lobby door assembly.

(8) Loss of power to the elevator lobby electrical lock system unlocks the electrical locks on the elevator lobby door assemblies.

| 7.2.1.6.3 | Elevator Lobby Exit Access Door Assemblies Locking. Where permitted in Chapters 11 through 43, door assemblies separating the elevator lobby from the exit access required by 7.4.1.6.1 shall be permitted to be electrically locked, provided that all the following criteria are met:

(1) The electrical locking hardware is listed in accordance with ANSI/UL 294, Standard for Access Control System Units.

(2) The building is protected throughout by a fire alarm system in accordance with Section 9.6.

(3) The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.

(4) Waterflow in the sprinkler system required by 7.2.1.6.3(3) is arranged to initiate the building fire alarm system.

(5) The elevator lobby is protected by an approved, supervised smoke detection system in accordance with Section 9.6.

(6) Detection of smoke by the detection system required by 7.2.1.6.3(5) is arranged to initiate the building fire alarm system and notify building occupants.

(7) Initiation of the building fire alarm system by other than manual fire alarm boxes unlocks the electrical locks on the elevator lobby door assembly.

(8) Loss of power to the elevator lobby electrical lock system unlocks the electrical locks on the elevator lobby door assemblies.

Where access to a required exit stair from an elevator lobby requires travel through a potentially secured area (e.g., a tenant space), the doors must automatically unlock on activation of the fire alarm system by other than a manual fire alarm box.
(9) Once unlocked, the elevator lobby door assemblies remain electrically unlocked until the building fire alarm system has been manually reset.

(10) Where the elevator lobby door assemblies remain mechanically latched after being electrically unlocked, latch-releasing hardware in accordance with 7.2.1.5.10 is affixed to the door leaves.

(11) A two-way communication system is provided for communication between the elevator lobby and a central control point that is constantly staffed.

(12) The central control point staff required by 7.2.1.6.3 is capable, trained, and authorized to provide emergency assistance.

(13) The provisions of 7.2.1.6.1 for delayed-egress electrical locking systems are not applied to the elevator lobby door assemblies.

(14)* The provisions of 7.2.1.6.2 for sensor-release of electrical locking systems are not applied to the elevator lobby door assemblies.

| 18.2.2.5.2 | Door-locking arrangements shall be permitted where patient special needs require specialized protective measures for their safety, provided that all of the following criteria are met:
(1) Staff can readily unlock doors at all times in accordance with 18.2.2.6.
(2) A total (complete) smoke detection system is provided throughout the locked space in accordance with 9.6.2.9, or locked doors can be remotely unlocked at an approved, constantly attended location within the locked space.
(3)* The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with 18.3.5.1.
(4) The locks are electrical locks that fail safely so as to release upon loss of power to the device.
(5) The locks release by independent activation of each of the following:
   (a) Activation of the smoke detection system required by 18.2.2.5.2(2)
   (b) Waterflow in the automatic sprinkler system required by 18.2.2.5.2(3)
(6) Hardware for new electric lock installations is listed in accordance with ANSI/UL 294, Standard for Access Control System Units. | New health care door locking for patient special needs (e.g., newborn nursery), doors must automatically unlock in the direction of egress on activation of the smoke detection system in the locked space or the automatic sprinkler system.

| 19.2.2.5.2 | Door-locking arrangements shall be permitted where patient special needs require specialized protective measures for their safety, provided that all of the following are met:
(1) Staff can readily unlock doors at all times in accordance with 19.2.2.6.
(2) A total (complete) smoke detection system is provided throughout the locked space in accordance with 9.6.2.9, or locked doors can be remotely unlocked at an approved, constantly attended location within the locked space. | New ambulatory health care door locking for patient special needs, doors must automatically unlock in the direction of egress on activation of the smoke detection system. |
<table>
<thead>
<tr>
<th>(3)* The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with 19.3.5.7.</th>
<th>system in the locked space or the automatic sprinkler system.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(4) The locks are electrical locks that fail safely so as to release upon loss of power to the device.</td>
<td></td>
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<tr>
<td>(5) The locks release by independent activation of each of the following:</td>
<td></td>
</tr>
<tr>
<td>(a) Activation of the smoke detection system required by 19.2.2.2.6(2)</td>
<td></td>
</tr>
<tr>
<td>(b) Waterflow in the automatic sprinkler system required by 19.2.2.2.6(3)</td>
<td></td>
</tr>
<tr>
<td>(6) Hardware for new electric lock installations is listed in accordance with ANSI/UL 294, Standard for Access Control System Units.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>20.2.2.2.6</th>
<th>Door-locking arrangements shall be permitted where patient special needs require specialized protective measures for their safety, provided that all of the following criteria are met:</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Staff can readily unlock doors at all times in accordance with 20.2.2.2.7.</td>
<td></td>
</tr>
<tr>
<td>(2) A total (complete) smoke detection system is provided throughout the locked space in accordance with 9.6.2.9, or locked doors can be remotely unlocked at an approved, constantly attended location within the locked space.</td>
<td></td>
</tr>
<tr>
<td>(3) The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7.</td>
<td></td>
</tr>
<tr>
<td>(4) The locks are electrical locks that fail safely so as to release upon loss of power to the device.</td>
<td></td>
</tr>
<tr>
<td>(5) The locks release by independent activation of each of the following:</td>
<td></td>
</tr>
<tr>
<td>(a) Activation of the smoke detection system required by 20.2.2.2.6(2)</td>
<td></td>
</tr>
<tr>
<td>(b) Waterflow in the automatic sprinkler system required by 20.2.2.2.6(3)</td>
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</tbody>
</table>

| 21.2.2.2.6 | Door-locking arrangements shall be permitted where patient special needs require specialized protective measures for their safety, provided that all of the following are met: (1) Staff can readily unlock doors at all times in accordance with 21.2.2.2.7. (2) A total (complete) smoke detection system is provided throughout the locked space in accordance with 9.6.2.9, or locked doors can be remotely unlocked at an approved, constantly attended location within the locked space. (3) The building is protected throughout by an approved, supervised automatic sprinkler system in accordance with Section 9.7. (4) The locks are electrical locks that fail safely so as to release upon loss of power to the device. (5) The locks release by independent activation of each of the following: (a) Activation of the smoke detection system required by 21.2.2.2.6(2) (b) Waterflow in the automatic sprinkler system required by 21.2.2.2.6(3) | |
|---|---|
| New ambulatory health care door locking for patient special needs, doors must automatically unlock in the direction of egress on activation of the smoke detection system in the locked space or the automatic sprinkler system. | |
| Existing ambulatory health care door locking for patient special needs, doors must automatically unlock in the direction of egress on activation of the smoke detection system in the locked space or the automatic sprinkler system. | |
SELECTED REVISIONS TO NFPA CODES AND STANDARDS FOLLOWING 2014 WORKSHOP ON SCHOOL SAFETY, CODES AND SECURITY


- Added provision to goals in Chapter 4 re. physical violence mitigation to ensure where buildings are designed to mitigate physical violence against occupants, such measures do not compromise compliance with other *Life Safety Code* requirements (4.2.4).
- Added provisions to allow door locking to prevent unwanted entry in selected occupancies - criteria are intended to ensure doors can be safely secured from the egress side of the door during a lockdown event and still permit rapid egress from the secured room if necessary. The new provisions also ensure authorized personnel can enter the secured room with a key or other credential. Occupancies providing the new criteria include:
  - New educational occupancies (14.2.2.2.4)
  - Existing educational occupancies (15.2.2.2.4)
  - New day-care occupancies (16.2.2.2.6)
  - Existing day-care occupancies (17.2.2.2.6)
  - New business occupancies (38.2.2.2.2)
  - Existing business occupancies (39.2.2.2.2)
- Added criteria and thresholds for required risk analyses to determine need for mass notification systems – risk analysis mandated for certain structures and occupancies in accordance with new provisions in Section 9.14, which in turn references NFPA 72, *National Fire Alarm and Signaling Code*. The purpose of the mass notification system is to communicate information about emergencies including, but not limited to, fire, human-caused events (accidental and intentional), other dangerous situations, accidents, and natural disasters (9.14.2.1). Structures and occupancies requiring such risk analysis include:
  - New high-rise buildings with 5000 or more occupants, or having an occupiable story more than 420 ft above the lowest level of fire department vehicle access (11.8.4.3)
  - New assembly occupancies having an occupant load of 500 or greater (12.3.4.5)
  - New educational occupancies (14.3.4.5)
  - New K-12, college, or university dormitories having an occupant load of greater than 100 (28.3.4.4.1)
  - New mall structures (36.4.4.7.5)
  - New business occupancies containing college or university classrooms (38.3.4.5)

**NFPA 5000, Building Construction and Safety Code, 2018 edition**
• Added provision to goals in Chapter 4 re. security features to ensure where buildings include features to protect occupants or contents, such features do not compromise compliance with other NFPA 5000 requirements (4.2.4).

• Added provisions to allow door locking to prevent unwanted entry in selected occupancies - criteria are intended to ensure doors can be safely secured from the egress side of the door during a lockdown event and still permit rapid egress from the secured room if necessary. The new provisions also ensure authorized personnel can enter the secured room with a key or other credential. Occupancies providing the new criteria include:
  o Educational occupancies (17.2.2.2.4)
  o Day-care occupancies (18.2.2.2.8)
  o Business occupancies (28.2.2.2.2)

• Added criteria and thresholds for required risk analyses to determine need for mass notification systems – risk analysis mandated for certain structures and occupancies in accordance with new provisions in Section 55.13, which in turn references NFPA 72, *National Fire Alarm and Signaling Code*. The purpose of the mass notification system is to communicate information about emergencies including, but not limited to, fire, human-caused events (accidental and intentional), other dangerous situations, accidents, and natural disasters (55.13.2.1). Structures and occupancies requiring such risk analysis include:
  o Assembly occupancies having an occupant load of 500 or greater (16.3.4.5)
  o Educational occupancies (17.3.4.5)
  o K-12, college, or university dormitories having an occupant load of greater than 100 (24.3.4.8.1)
  o Mall structures (27.4.4.11.4)
  o Business occupancies containing college or university classrooms (28.3.4.4)
  o High-rise buildings with 5000 or more occupants, or having an occupiable story more than 420 ft above the lowest level of fire department vehicle access (33.3.1.3)


After the 2014 workshop, NFPA 730 was revised with numerous new sections addressing educational facilities, colleges, and universities. Definitions were added to address lockdowns, duress alarm initiating devices, and sheltering-in-place. New requirements in Chapter 11 include security drills, visitor identification, monitored entry, locking hardware, and security vulnerability assessments. The committee also developed annex material to explain the concepts behind these features.

• Selected new/revised NFPA 730 provisions
  o **3.3.12.1* Duress Alarm Initiating Device.** An initiating device intended to enable a person at a protected premises to initiate a signal indicating a need for assistance. [731, 2017]
  o **A.3.3.12.1 Duress Alarm Initiating Device.** Often these alarms are triggered by unobtrusive sensors so as to not place the victim in increased danger. Duress
alarms are usually designed to silently initiate an alarm, which is annunciated at a commercial or proprietary monitoring station or guard post. [731, 2017]

- **3.3.30 Lockdown.** A state where the building is secured and occupants are sequestered in the nearest safe location and not allowed to move within the building.

- **3.3.31 Lockout.** A state where the perimeter of the building or property is secured for ingress and occupants are free to move within the building.

- **3.3.43* Shelter-in-Place.** Occupants within the building remain indoors until given further instructions.

- **A.11.1.3.2(7)(e)** Due to a rise in active shooter incidents, many schools have instituted protocols to protect the students and faculty from both internal and external threats. The security plan should detail how to implement such protocols in a way that is both practical and practicable.

  During school lockdowns, all exterior doors and windows are locked or otherwise secured against entry, lights are turned off, and blinds (where provided) are closed to restrict visual access to the interior. Occupants should stay low and away from windows and doors. Hallways, bathrooms, and any areas that cannot be secured should be cleared. Take all students, faculty, and visitors/vendors into account. Remain in place until an all clear from authorized personnel is given.

  During school lockouts, all exterior doors are locked and the main entrance is monitored by an administrator, administrator designee, security officer, or school resource officer. This procedure allows the school to continue with normal inside activity but restricts outside activity.

Shelter-in-place is the use of a structure and its indoor atmosphere to temporarily separate individuals from a hazardous outdoor environment.

Confusion needs to be minimized when any of these protocols are implemented. Schools, particularly large campuses, have many groups of people who might need to have access during a lockdown, such as campus police, local police, fire, ambulance, management, counselors, emergency responders, and senior administrators. It is important that these groups and their means of access be described and documented, since several departments could be responsible for the protocols.

See FEMA 428, *Primer for Design Safe Schools Projects in Case of Terrorist Attacks*, for material on shelter-in-place.

- **11.3.2 Exterior – Primary School (K-12) Property.**
  - **11.3.2.1** Exterior security perimeters should be designated and protected in accordance with Chapter 7.
  - **11.3.2.2** In accordance with Section 7.2, secondary exterior security perimeters should include, but not be limited to, the following areas:
(1) Exterior locations used by students for school activities that are designated as unsecured and protected
(2) Parking lots that are designated as secured and controlled
(3) Building exterior walls and portals that are designated as secured and controlled

11.3.2.2.1 Where feasible, there should be designated parking areas for the following:
(1) Staff
(2) Students
(3) Visitors
(4) Vendors
(5) Bus loading/unloading

11.3.2.2 Designated parking areas should be clearly distinguishable and protected through the use of signage and/or physical or electronic security barriers such as gates or security posts.

11.3.2.3 All portals in the building perimeter should be controlled in accordance with Section 7.5.

11.3.2.4 The building perimeter should have dedicated portals for the following occupants:
(1) Students
(2) Staff
(3) Visitors
(4) Vendors

11.3.2.4.1 The student portal(s) should have the following controls in place:
(1) Visual monitoring by a staff member or volunteer during student arrival and dismissal times
(2) Locks to prevent entry except at arrival and dismissal times

11.3.2.4.2 The staff portal(s) should be locked at all times with entry requiring a valid key/credential.

11.3.2.4.3 Entry at the visitor and vendor portal(s) should be controlled by one or more of the following:
(1) Monitoring by a staff member or volunteer
(2) Electronic access control

11.3.4.6 At a minimum, all exterior portal windows and sidelights should be designed to prevent or delay entry if the glazing is attacked.

11.3.4.7* All classroom doors should be equipped with locking hardware that allows for a single motion egress as defined by NFPA 101.

A.11.3.4.7 The locking hardware is intended to not be disabled by an electronic means.

11.3.4.7.1 All classroom-locking hardware should be lockable from inside the classroom without special knowledge, tools, or credentials.

11.3.4.7.2 All classroom-locking hardware should be unlockable from the hallway side with a key or credential.
11.3.4.8 Classroom door sidelights should be located on the hinge side of the door and be designed not to allow unauthorized persons from breaking the sidelight glass and accessing the door locking hardware.

11.3.4.9 Classroom door sidelights and door windows should be designed so that if the glass is broken, a person cannot gain access to the interior of the classroom.

**NFPA 3000™(PS), Standard for an Active Shooter/Hostile Event Response (ASHER) Program, 2018 edition**

For only the second time in the 121 year history of the NFPA, a provisional standard has been expeditiously developed to address the emergent needs of communities as they prepare, for, respond to, and recover from active shooter/hostile events. NFPA 3000™ (PS); Standard for an Active Shooter/Hostile Event Response (ASHER) Program, identifies the minimum program elements needed to organize, manage, and sustain an active shooter and/or hostile event response program that helps mitigate the risks, effect, and impact on an organization or community affected by these events. Specific polices, tactics, and protocols are the responsibility of the local organization or community and not included in the standard. The standard was developed by a technical committee consisting of local, state, and federal law enforcement, fire, EMS, private security, healthcare, facility management, and many others. The committee also has 11 representatives who were direct responders and/or victims in recent ASHER incidents.
Appendix C. Acronyms and Abbreviations

AHJ Authority Having Jurisdiction
ANSI American National Standards Institute
ARPA- E Advanced Research Projects Agency- Energy
ASCE American Society of Civil Engineers
ASHRAE The American Society of Heating, Refrigerating and Air-Conditioning Engineers
BCEGS Building Code Effectiveness Grading System
BMS Building Management System
BOMA Building Owners and Managers Association
CDC Centers for Disease Control
CSB U.S. Chemical Safety and Hazard Investigation Board
DOE Department of Energy
DOJ Department of Justice
DHS U.S. Department of Homeland Security
EAP Emergency Action Plan
ECS Emergency Communication Systems
EM Emergency Management
EMS Emergency Medical Services
EOP Emergency Operations Plan
FM Fire Marshal
IBC International Building Code
ICC International Code Council
ICS Incident Command System
IEEE Institute of Electrical and Electronics Engineers
IFMA International Fire Marshals Association
IoT Internet of Things
ISO International Organization for Standardization
JUMP JUvenile Mentoring Program
MNS Mass Notification System
NAHB National Association of Home Builders
NASFM National Association of State Fire Marshals
NCSTA North Carolina Science Teachers Association
NFPA National Fire Protection Association
NIMS National Incident Management System
NIOSH National Institute for Occupational Safety and Health
NTSB National Transportation Safety Board
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>OSDP</td>
<td>Open Supervised Device Protocol</td>
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<tr>
<td>OTT</td>
<td>Office of Technology Transitions</td>
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<tr>
<td>PASS</td>
<td>Partner Alliance for Safer Schools</td>
</tr>
<tr>
<td>PSA</td>
<td>Public Service Announcement</td>
</tr>
<tr>
<td>PTA</td>
<td>Parent Teacher Association</td>
</tr>
<tr>
<td>SDOs</td>
<td>Standards Development Organizations</td>
</tr>
<tr>
<td>TC</td>
<td>Technical Committee</td>
</tr>
<tr>
<td>TSA</td>
<td>Transportation Security Administration</td>
</tr>
<tr>
<td>UL</td>
<td>Underwriters Laboratories</td>
</tr>
<tr>
<td>WBDG</td>
<td>Whole Building Design Guide</td>
</tr>
</tbody>
</table>
Appendix D. Workshop Speaker Bios

**Natalie Hammond.** Natalie taught third grade at Sandy Hook Elementary for thirteen years before becoming the Lead Teacher in the building. In a morning meeting on December 14, 2012, she heard alarming sounds outside of the main office. She, along with the Principal and School Psychologist, confronted the unknown. Although wounded multiple times during the attack, Natalie survived her injuries. She now serves as Principal in a PreK-4 elementary school in Connecticut. Since the tragedy, she works with groups around the country to discuss resiliency in the face of adversity and the importance of communication and collaboration when developing safety plans.

**Geoff Craighead, CPP.** Geoff is vice president of field training and development for Allied Universal, the largest private security contractor in the U.S. He is an expert witness in security operations and crisis management for corporate campus and commercial high-rise facilities, authored three editions of *High-Rise Security and Fire Life Safety*, and contributed chapters and articles on high-rise security, emergency planning, and security consulting, and the use of computers in security management. Geoff graduated from the Australian National University in 1974, and is a past president of ASIS International. He can be reached at: geoff.craighead@aus.com.

**Steven A. Adelman.** Steve is the head of Adelman Law Group, PLLC in Scottsdale, Arizona and Vice President of an international trade association, the Event Safety Alliance. His law practice focuses on risk management and litigation regarding safety and security at live events throughout North America, and he serves as an expert witness in crowd-related lawsuits. Steve Adelman is widely recognized as an authority on live event safety and security. He writes the monthly “Adelman on Venues” newsletter, he teaches “Risk Management in Venues” at Arizona State University’s Sandra Day O’Connor College of Law, and he frequently appears in national and local media for analysis of safety and security incidents at public accommodations. Steve Adelman graduated from Boston College Law School in 1994. He can be reached at: sadelman@adelmanlawgroup.com.

**Joseph E. Trainor, Ph.D.** Joe is an Associate Professor in the School of Public Policy and Administration at the University of Delaware. He is also the Program Director for the Disaster Science and Management Degree Programs and a Core Faculty member at the Disaster Research Center. In these roles he conducts research, provides consultation, teaches, and mentors students.

Trainor’s work is multi-disciplinary and often uses qualitative and quantitative approaches in mixed methods projects. His studies include “basic” science, applied research, and rapid reconnaissance post-disaster fieldwork studies. Recent projects have focused on: International Aspects of Disasters; Disaster Researcher and Practitioner Integration; Warnings, Risk Perception, and Protective Action Decision making for short fuse hazards; Post Hurricane Housing Decisions; Household Insurance and Mitigation Decision, and Multi-organizational Response. Trainor frequently publishes and presents research findings to academic, professional, and public audiences.
As the Program Director of the Disaster Science and Management (DISA) program, he administers the DISA MS and PhD programs. He teaches courses and advises students across the Disaster Education @UD and School of Public Policy and Administration programs (SPPA). He also serves on key committees for these programs and for the School of Public Policy and Administration.

Finally, Trainor has international experience and has worked on projects with collaborators in India, Sri Lanka, Netherlands, Sweden, Japan, and Australia.

**John Montes.** John is an Emergency Services Specialist at the National Fire Protection Association, currently assigned as staff liaison to the technical committees for EMS, Fire Service Occupational Safety and Health, Hazardous Materials Response, and Cross Functional Emergency Preparedness and Response. A nationally registered EMT, John has worked in EMS in several different roles, from the private service to Boston EMS, to serving as an EMS Specialist/EMS Duty Chief for the County of Santa Clara EMS Agency. In his role at the NFPA John is assigned as representative to the Joint National EMS Leadership Forum, National EMS Advisory Council, and the Road to Zero Coalition.
Appendix E. Workshop Presentations

Security Challenges in Today’s World - Geoff Craighead

Security Challenges in Today’s World

Geoff Craighead, CPP
Vice President, Field Training and Development

Speaker Credentials

- 38 years experience in security management
- Board certified in security management as a Certified Protection Professional (CPP)
- Certified by Los Angeles City Fire Department in High-Rise Life Safety Services
- Member of NFPA High-Rise Building Safety Advisory Committee
- Past President-ASIS International Board of Directors, ASIS Commercial Real Estate Council and ASIS Professional Certification Board
Agenda

Types of occupancies

Security and life safety threats

Best operational practices

When to consider security issues for an occupancy?

Public and private sector partnerships

Types of Occupancies
Types of Occupancies

Commercial Office Buildings
Residential and Apartment Buildings
Hotel and Lodging Buildings
Shopping Centers and Retail
Educational Facilities—Colleges, Universities and Schools
Aerospace, Defense and Government Facilities
Chemical, Petrochemical and Utilities
Healthcare Facilities
Manufacturing, Distribution and Industrial Facilities

Security and Life Safety Threats
Security and Life Safety Threats

- Active shooter/workplace violence
- Aircraft collision
- Assault
- Bomb and bomb threat
- Burglary
- Contractible disease (pandemic influenza, SARS, tuberculosis)
- Cyber attack
- Daredevil, protestors
- Demonstrations/Protests
- Elevator and escalator incident
- Espionage
- Fire and fire alarm
- Hazardous materials, chemical and biological weapons and nuclear attack
- Kidnapping and hostage situation
- Labor dispute, demonstration and civil disorder
- Medical emergency
- Manslaughter and murder
- Natural disaster (earthquake, tsunami, storm, flood and landslide)
- Power failure
- Robbery
- Sabotage
- Sex offenses
- Slip and fall
- Stalking
- Suicide
- Terrorism
- Theft
- Traffic accident
- Trespass
- Vandalism
- Water leak

Active Shooter
## Deadliest Mass Shootings in U.S. (1949 to present)

<table>
<thead>
<tr>
<th>Incident</th>
<th>Year</th>
<th>Deaths</th>
<th>Injuries</th>
<th>Type of firearm(s) used</th>
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<tbody>
<tr>
<td>Las Vegas shooting</td>
<td>2017</td>
<td>59</td>
<td>897</td>
<td>Semi-automatic rifle</td>
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<tr>
<td>Orlando nightclub shooting</td>
<td>2016</td>
<td>49</td>
<td>51</td>
<td>Semi-automatic rifle and pistol</td>
</tr>
<tr>
<td>Virginia Tech shooting</td>
<td>2007</td>
<td>32</td>
<td>23</td>
<td>Semi-automatic pistol</td>
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<tr>
<td>Sandy Hook Elementary School shooting</td>
<td>2012</td>
<td>26</td>
<td>20</td>
<td>Semi-automatic rifle and pistol</td>
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<tr>
<td>Sutherland Springs church shooting</td>
<td>2017</td>
<td>27</td>
<td>26</td>
<td>Semi-automatic rifle</td>
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<tr>
<td>Utopia Elementary School shooting</td>
<td>1986</td>
<td>14</td>
<td>9</td>
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<td>San Antonio Islamic mosque shooting</td>
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<td>University of Texas tower shooting</td>
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<td>Stoneman Douglas High School shooting</td>
<td>2013</td>
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<td>17</td>
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<td>San Bernardino shooting</td>
<td>2016</td>
<td>14</td>
<td>24</td>
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<td>Virginia Tech shooting</td>
<td>2008</td>
<td>14</td>
<td>19</td>
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<td>Columbine High School massacre</td>
<td>1999</td>
<td>12</td>
<td>24</td>
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<td>Virginia Tech shooting</td>
<td>2007</td>
<td>16</td>
<td>6</td>
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<td>Fort Hood shooting</td>
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<td>Columbine High School massacre</td>
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<td>2007</td>
<td>13</td>
<td>1</td>
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<tr>
<td>Washington Navy Yard shooting</td>
<td>2013</td>
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<td>6</td>
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<td>Austin shooting</td>
<td>2012</td>
<td>12</td>
<td>12</td>
<td>Multiple types of firearms</td>
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<tr>
<td>Sandy Hook Elementary School shooting</td>
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<td>11</td>
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<td>Charlottesville shooting</td>
<td>1975</td>
<td>11</td>
<td>0</td>
<td>Semi-automatic pistol and receiver</td>
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## Active Shooter Incidents in the U.S. 2000-2016

**Quick Look:** 220 Active Shooter Incidents in the United States Between 2000 - 2016

Casualties Per Year

[Graph showing active shooter incidents from 2000 to 2016]

Active Shooter Incidents in the U.S.

"Of the 160 active-shooter incidents in the U.S. between 2000 and 2013, duration could be determined in 64 of them; of those, roughly two-thirds ended within five minutes, and a third ended in less than two minutes, according to a 2014 joint study between the FBI and Texas State University.

"In about half of all active-shooter incidents during that period, the shooter either fled the scene or committed suicide before police could act, the study found."

Active Shooter Incidents in the U.S. 2016 and 2017

By the Numbers

- 943 incidents (including 32 fatalities)
- 13 law enforcement officers killed
- 20 law enforcement officers wounded
- 20 law enforcement officers “non-fatal” injuries
- 14 civilians killed with the exchange of gunfire between the shooter and law enforcement
- 50 shooters — 21 male
- 3 shooters in public area
- 13 shooters committed suicide

11 shooters killed by police
8 shooters stopped by armed civilians
18 shooters apprehended by police

*Terrorism

THE PERSISTENT TERROR THREAT TO AMERICA

Since 2013...

144 HOMEGROWN JIHADIST CASES in 29 STATES for...

- PLOTS TO ATTACK
- OVERSEAS TRAVEL
- FINANCIAL SUPPORT
- LYING TO AUTHORITIES
- WEAPONS CHARGES

This document is produced by the Majority Staff of the House Homeland Security Committee. It is based on information culled from open source materials, including media reports, publicly available government statements, and nongovernmental assessments.

In 2017, there have been an average of 11 terror attacks, plots, or arrests per month.

ISIS-LINKED PLOTS AGAINST THE WEST SINCE 2013

<table>
<thead>
<tr>
<th>Year</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
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<tbody>
<tr>
<td>Cases</td>
<td>68</td>
<td>15</td>
<td>49</td>
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<td>Attacks:</td>
<td>Ammunition</td>
<td>Car Bomb</td>
<td>Explosives</td>
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<tr>
<td>2013</td>
<td></td>
<td></td>
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<td>2016</td>
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</tr>
<tr>
<td>2017</td>
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</table>

HOMEGROWN JIHADIST CASES IN AMERICA SINCE 9/11

= 214 TOTAL

This document is produced by the Majority Staff of the House Homeland Security Committee. It is based on information culled from open source materials, including media reports, publicly available government statements, and nongovernmental assessments.
Terror Threat Snapshot Homegrown Jihadist Cases Since 9/11

Vehicle Attacks

“Vehicle attacks by ISIS supporters have grown in popularity due to the relative ease of acquiring a vehicle as opposed to building a bomb or purchasing a weapon.

“An Al Qaeda affiliate in Yemen first called for vehicle attacks in an online Al Qaeda magazine, calling trucks the ‘ultimate mowing machine’ to take ‘down the enemies of Allah.’”

Vehicle Attacks


Timeline:

March 3, 2016 - Mohammad Taheri-Azar, an Iranian-American, drives an SUV into an area crowded with students at the University of North Carolina at Chapel Hill. Nine people sustain minor injuries during the attack, which Taheri-Azar later says is retribution for the killing of Muslims overseas. He is convicted of attempted murder in 2018 and is sentenced to 33 years in prison.

October 22, 2014 - A three-month-old girl and an Ecuadorian tourist are killed when a driver overturns into a crowd at a light rail station in Jerusalem. The driver, Abdel Rahman al-Shaludi, is shot and killed by police. Israeli media reported he published vitriolic writing on Facebook and supported Hamas, a fundamentalist Islamic group that has conducted attacks in Gaza and the West Bank, but his family denied he supported Hamas or any terrorist organization.

July 14, 2016 - After a Bastille Day fireworks display in Nice, France, a man drives a 20-ton rental truck into the crowd, striking and killing 84 people. The attacker, Mohamed Lahouaiej Bouhlel, 31, a Tunisian national, drives nearly a mile on the beachfront promenade before he is shot and killed by authorities. French officials say Bouhlel seemed to become radicalized “very quickly” by ISIS propaganda before the attack. He also suffered from mental illness, according to his father.

November 29, 2016 - At Ohio State University, 11 people are injured when a student, Abdul Razak Ali Artan, 18, carries out a car and knife attack. A campus police officer shoots and kills Artan, whom police believe was inspired by ISIS and the radical cleric, Anwar al-Awlaki.

December 10, 2016 - A Tunisian man drives a tractor trailer into a Christmas market in Berlin, killing 12 people. In the wake of the attack, authorities conduct a manhunt for Anis Amri, 29, throughout Europe. He is shot and killed by police in Milan, Italy, four days after the attack. Hours after Amri dies, ISIS releases a video of him pledging allegiance to the terrorist group.

Vehicle Attacks


Timeline:

March 22, 2017 - A man drives an SUV into a crowd on the sidewalk along the Westminster Bridge in London, killing at least four. After ramming the car into a barrier outside the House of Parliament, the driver exits the vehicle and attacks a police officer to death. The attacker is then gunned down by a police officer. The assailant, Khalid Masood, 52, of West Midlands, reportedly had a criminal record and may have had connections to violent extremism, British Prime Minister Theresa May says.

April 7, 2017 - At least four people are killed when a truck drives into pedestrians on a busy street in the center of Stockholm, Sweden, before crashing into a department store. The attacker, Rachid Akkou, a 36-year-old from Lebanon, admitted to carrying out a “terrorist crime,” his lawyer says.

June 3, 2017 - Eight people are killed in two terrorist attacks in central London before police shoot three suspects dead; the Metropolitan police say. The violence begins when a van swerves into throngs of pedestrians on London Bridge. The suspects then jump out the van and proceed on foot to nearby Borough Market, a popular nightlife spot, where witnesses say they produce knives and stab indiscriminately at people in restaurants and bars. At least 48 people are taken to hospitals, according to the London Ambulance Service.

June 19, 2017 - Just after midnight, a van drives into a group of pedestrians who had attended late-night prayers at London’s Finsbury Park Mosque, killing one man and injuring 11 people. The driver is arrested at the scene for attempted murder and farther held on suspicion of terrorism offenses. The suspect is later identified as Darren Osborne, 47, a resident of Cardiff in Wales, according to multiple UK media outlets. Osborne is later sentenced to life imprisonment with a minimum term of 42 years.
Vehicle Attacks


Timeline:

August 10-18, 2017 - At least 13 people are killed and about 150 are injured on August 17th after a van plows through a crowd of people in a popular tourist district in Barcelona, Spain. Two suspects are arrested, but the driver gets away, according to police. ISIS media wing, Amaq, issues a statement claiming responsibility, saying that the attackers are “soldiers of the Islamic State.” On August 18th, in Cambrils, a coastal city around 100 kilometers from Barcelona, five attackers drive an Audi A3 into several pedestrians, killing one. The attackers are shot and killed by police. A house explosion on August 10th, in Arenys, south of Barcelona, is also believed to be connected to the attacks.

September 30-October 1, 2017 - On September 30 in Edmonton, Canada, a man purposely stabs a police officer with a wire coat hanger before jumping out of the vehicle, stabbing the officer several times with a knife and fleeing on foot. There is an ISIS flag in the car, which is later seized as evidence. Just before midnight that same day, a police officer stops a U-Haul truck at a checkpoint and recognizes the driver’s name as similar to that of the Chevrolet’s registered owner. The U-Haul truck then speeds off towards downtown Edmonton. During the chase, the truck deliberately attempts to hit pedestrians in crosswalks and alleys, injuring at least four pedestrians. Abdullah Hasan Sharif, 35, aennial refugee, is later charged with five counts of attempted murder, dangerous driving, criminal flight causing bodily harm and possession of a weapon for a dangerous purpose.

October 31, 2017 - Eight people are killed and almost a dozen injured when a 23-year-old man in a rented pickup truck drives down a busy bicycle path near the World Trade Center in New York. The captured suspect has been identified as Sayfullo Habibullaevic Saipov. Authorities found a note near the truck used in the incident, claiming the attack was made in the name of ISIS, a senior law enforcement official said.

Additional Incident

April 23, 2018 – Ten people are killed and 18 injured. “Alek Minassian charged with 10 counts of first-degree murder, accused of jumping the sidewalk with a rented van and ramming pedestrians along a 2.2 kilometre stretch in North York.”

Use of Technology and Social Media

![Book Cover: Future Crimes by Marc Goodman]

Best Operational Practices

[Allied Universal Logo]
Commercial Office Buildings

- Open or closed environment for occupants, visitors, contractors and vendors
- Controlled loading dock and service elevators
- Controlled vehicle access to parking garages and lots

Commercial Office Buildings

- Trained security personnel and lobby ambassadors delivering concierge-level customer service
- Technologies include access control, video, visitor management, and mass notification systems
- Emergency Action Plans
Active Shooter Guidelines in Emergency Plans

**Profile**

Active shooters are individuals who are motivated to attack a place or people in an unsafe or way.

**Characteristics**

- Violent, uncontrolled emotions
- Uncontrollable behavior
- Uncontrollable need to retain an active shooter situation

**Coding**

- In your environment, act to minimize danger
- 如果 you are in a building, be aware of your surroundings
- Look out for others, if possible and secure the area

**How to Respond**

1. **Prepare**
   - Have a plan and follow orders
   - Dance to any potential threats
   - Carry your bag or purse

2. **Hide**
   - Stay away from doors and windows
   - Cover your head and torso

3. **Fight**
   - Attack the active shooter
   - Try to get to the active shooter
   - Try to be an obstacle

**Information**

- Visit www.usdoj.gov for more information.

Residential and Apartment Buildings

- Open or closed environment for occupants, visitors, contractors and vendors
- Controlled vehicle access to parking garages and lots
- Technologies include telephone or voice-over Internet Protocol entry, access control, intrusion detection, video, and visitor management systems
Residential and Apartment Buildings

- Trained security staff delivering concierge-level customer service
- Emergency Action Plans

Hotels and Lodging Buildings

- Open and welcoming environment for guests and patrons
- Controlled loading docks and employee entrances
- Open or controlled vehicle entry to parking garages and lots, valets at main entrances of major hotels
Hotels and Lodging Buildings

- Guest room security
  (access card, deadbolt lock and security latch, in-room safe, door viewer, security/safety awareness)
- Trained security personnel and housekeeping staff
- Fire life safety program primarily executed by hotel staff

Shopping Centers and Retail

- Open and welcoming environment for shoppers
- Free access to both exterior (parking garages and lots) and interior (shops, common areas)
- Security technologies prominently feature video
- On-site, dedicated security officers and leadership staff
Shopping Centers and Retail

- Multi-faceted, diverse roles and duties
  - customer ambassadors, crime prevention/response, critical incident response, accident prevention
- Staff perceived as primary representatives of ownership who are sensitive to public relations concerns
- Robust statistical and incident analysis drives patrol deployment

Educational Facilities—Colleges, Universities and Schools

- Balance between a welcoming yet secure environment for students and faculty
- Controlled vehicle access to campus, parking garages and lots
- Site-specific risks such as large scale events
Educational Facilities—Colleges, Universities and Schools

- Technologies include access control, video, intrusion detection, and mass notification systems
- Trained campus security and school security staff, plus potential students/staff (resident life)
- Focus on mutual aid and MOUs with federal, state and local first responders
- Federal compliance with Clery Act on reporting assaults, rapes, and fires; emergency notifications; and annual drills
- Emergency Action Plans include lock-down protocols

“Addressing both the security needs and the fire safety needs of students and faculty requires a delicate balance.

“Long-established and proven concepts like free and unobstructed means of egress are being clouded by aftermarket door-locking contrivances.

“And because activation of the building fire alarm system could be a perpetrator’s way to get students into the corridor or out of the building for purposes of causing harm, delayed evacuation might be suggested.”

Aerospace, Defense and Government Facilities

- Highly regulated environment
  - US Government security clearances
  - National Industrial Security Program (NISP)
  - National Classification Management System (NCMS)

- Closed environment to protect physical plant, inventory and employees

- Trained security personnel

- Technologies include access control, video, and intrusion detection systems

Chemical, Petrochemical and Utilities

- Highly regulated environment:
  - Maritime Security (MARSEC)
  - Customs-Trade Partnership Against Terrorism (C-TPAT)
  - Chemical Facility Anti-Terrorism Standards (CFATS)
  - MTSA Facility Security Officer Training (FSO - Managers)
  - North American Electric Reliability Corporation-Critical Infrastructure Protection (NERC-CIP)

- Closed environment to protect physical plant, inventory and employees

- Trained security personnel

- Technologies include access control, video, and intrusion detection systems
Healthcare Facilities

- Highly regulated environment
  - NFPA 99 Healthcare Facilities Code
  - Department of Health and Human Services Centers for Medicare & Medicaid Services and Accreditation (CMS)
- Closed environment for patients and visitors
- Controlled vehicle access to parking garages and lots

Healthcare Facilities

- Technologies include incident management, visitor management, infant and patient alarms, panic/duress alarms, access control, audio/video, tour guard, intrusion detection, and mass notification systems
- Trained security staff
- Emergency Action Plans
Manufacturing, Distribution and Industrial Facilities

- Closed environment to protect physical plant, inventory and employees
- Inspections of delivery vehicles
- Trained security personnel
- Technologies include access control, video, and intrusion detection systems

When to Consider Security for An Occupancy?
When to Consider Security Issues for An Occupancy?

“Integrating any additional or supplemental measures that address occupant and building security must be done as part of the larger design and operational packages that are applicable to any building or venue.

“As noted in the 2014 workshop report, it seems as though security is still viewed as a ‘bolt on’ to the many other building systems and features that are considered from the concept stage until the certificate of occupancy is issued.

“We can do a better job of reversing that approach and ensuring that the security issues are dealt with upfront as well as during the design process.”


Public and Private Sector Partnerships
Public and Private Sector Partnerships

Since 9/11, there has been considerable improvement in the relationship between local, state and federal law enforcement, intelligence agencies, fire departments, emergency medical responders and the private sector, including private security, involved in protecting the nation’s critical infrastructure.

Increased awareness of each group’s responsibilities and capabilities, improved collecting and sharing of information, and heightened education of the general public have all contributed to improving the security and life safety of all types of facilities.

Statement

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Field Training & Development
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ALLIED UNIVERSAL

E-24
Emergency Planning and “Black Swans”
Steve Adelman

Agenda:
1. Adelman’s Disclaimer and Street Cred;
2. The Legal Duty of Care;
3. Applying the Law.
Although I am an attorney, and a good one at that, this talk is not legal advice.

You (or your employer) are not my clients. At least not yet.

If you want legal advice, you will have to get it the old fashioned way.

1. Adelman’s Famous Legal Disclaimer
Adelman on Venues

December, 2016

www.adelmaunawgroup.com

Oakland in Context: Preaching Beyond the Choir

Like many of you, I am shaken by the deadly fire at the Ghost Ship warehouse in Oakland, California. Having spent Monday through Thursday last week talking about life safety first to more than 200 attendees at the 2016 Annual Safety Summit, and enjoying being surrounded by people who share my commitment to this important cause, as Friday night I was shocked back to the reality that many people don’t think much about risk or safety at all.

I have no particular insight into the specifics that occurred in Oakland. I read the same news stories you do. Instead, I am devoting this space to (1) the context in which something like this could occur, yet again, and (2) what each of us can do about it.

Steven Adelman
1200461092
Faculty
Arizona State University
2. The Legal Duty of Care
The Legal Duty of Care

Everyone has a common law duty to behave as a Reasonable person under the same or similar circumstances.

3. Applying the Duty of Care

a) All Hazards?
b) The Peril of “Black Swans;”
c) Schadenfreude;
d) Situational Awareness;
e) Constructive Suggestions.
All Reasonably Foreseeable Hazards

What is “Reasonably Foreseeable” Now?
The Peril of “Black Swans”
The Elements of a “Black Swan”

1. **Rarity**: Beyond reasonable expectations -- nothing in the past points to its possibility;

2. **Impact**: Totally changes one’s perspective;

3. **Retrospective Predictability**: People create explanations after the fact to make it appear predictable.

A reasonable person must distinguish unlikely “Black Swans” from reasonably foreseeable risks.

But each new incident changes the likelihood any particular risk will occur again.
Might your foreseeable risks be more mundane?

Is terrorism really your biggest worry?

Enjoy your schadenfreude.
Even well-meaning, sober professionals make mistakes all the time.

Situational Awareness?
Constructive Suggestions

1. Create clear messaging to patrons, workers, other visitors;
2. Practice multiple means of communication;
3. Use every egress as evacuation practice;
4. Teach crowd managers to lead by example;
5. Have someone careful check exits, trip hazards, lighting, signage;
6. Revisit the Emergency Action Plan to ensure it distinguishes policy from procedures;
7. Focus on the most reasonably foreseeable risks under the circumstances, not the Black Swans;
8. The more important an issue is, the more training and experience you want to apply when addressing it.
Hope is not a plan.

Event Safety Alliance
eventsafetyalliance.org

Adelman Law Group, PLLC
adelmanlawgroup.com
Warning Systems: The Human Dimension

Joseph Trainor

Warning Systems: The Human Dimension
Dr. Joseph E. Trainor

Associate Professor
University of Delaware
School of Public Policy and Administration
Core Faculty, Disaster Research Center (DRC)
Program Director, Disaster Science and Management

Caveats

• I study warning and risk processing generally.
• Mostly focused on Natural Hazards
• Some work on Nuclear and Dirty Bomb
• Also a Policy Guy
  – Policy is never perfect
  – Almost always creates winners and losers. The idea is to:
    • Make fewer losers
    • And don’t break the law.
Several Important Things to Consider

People
System
Messages
Context

People: The General Human Behavioral Response to Disasters

KEEP CALM AND DON’T PANIC
Public Response
*(Lindell and Perry 2011)*

- Individuals interpret messages and make decisions

---

Hear the Warning
Understand the Contents
Believe the Warning
Confirm the Information
Personalize the Threat
Respond/Protect
System

- Sources
  - Principle
  - Police
  - Fire

- Channels
  - Siren
  - Loud speaker
  - Text message

- Organizations

Message

- Style
  - Clear
  - Specific
  - Accurate
  - Consistent

- Content
  - Hazard
  - Time
  - Location
  - Guidance
Some dynamics to consider in the school context.

- Some times you need a static system (fire alarm) sometimes you need a dynamic system for fast paced environment. (one that can adapt.)
- Consider security from the perpetrator. (most are from the community) but not at the expense of information for everyone else (who you want to act.)
- Consider the ability to communicate at a granular level. (risk is not evenly distributed)
- Information will be imperfect (we don’t always know when we want to)
- Student and Teacher Dynamic (Leadership and Keynoting)
- Concerned about risk communication in a multi-hazard environment. (But all risks are not equal)

Think it Through

<table>
<thead>
<tr>
<th>Reasonable Scenarios</th>
<th>Desired Response Activities</th>
<th>Communication Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Day</td>
<td>Normal Activities</td>
<td>Fire Alarm</td>
</tr>
<tr>
<td>False Alarm</td>
<td>Shelter In Place</td>
<td>Delayed Alarm</td>
</tr>
<tr>
<td>恬心 Fire</td>
<td>Total Evacuation</td>
<td>Multi-Tone Alarm (bad idea)</td>
</tr>
<tr>
<td>Missed Fire</td>
<td>Delayed Evacuation (requires confirmation process)</td>
<td>Use of Secondary Communication devices</td>
</tr>
<tr>
<td>Unknown Shooter</td>
<td>Phased/Partial Evacuations</td>
<td>Others</td>
</tr>
<tr>
<td>Active Shooter</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Analysis Needs
- Characteristics of the Scenarios
- Probability of occurrence
- Characteristics of the options
- Consequences/ outcomes
- Links between changes and outcomes
NFPA 3000
John Montes
Active Shooter Incidents: 2000-2016

- 220 incidents occurred between 2000 and 2016
- 1,486 casualties, including killed and wounded
  (Note: several incidents in this list)
  - 661 were killed in 120 incidents
  - 825 were wounded in 120 incidents

Incident Location Categories

Quick Look: 220 Active Shooter Incidents in the United States Between 2000 - 2016

Location Categories:
- Education, 21.8% (48)
- Commerce, 41.2% (94)
- Government, 10.5% (23)
- Open Space, 13.3% (29)
- Health Care Facilities, 2.7% (6)
- Houses of Worship, 3.6% (8)
- Military, 3.2% (7)
- Commerce (Business, Open space, retail), 21.3% (46)
- Government (Business, Government, Educational), 21.4% (47)
- Health Care Facilities, 2.7% (6)
- Houses of Worship, 3.6% (8)
Active Shooter Events in the U.S.: 2000-2015

How Did NFPA Get Involved?

Why NFPA?
- Time-Tested Process
- Accredited
- Can Build Consensus

- Public Request to Create a New Standard
- Provisional Standard Created
- 97% of input was positive to create the standard
- Most Technical Committee Applications Ever Received
- Creation of formal, balanced, and broad technical committee
- Active Shooter Events Keep Happening / Same After Action Issues
Who Works on NFPA 3000™ (PS)?

46-Member NFPA Technical Committee

- Representatives from law enforcement, fire, EMS, emergency management, facility management, healthcare officials, higher education administration, and private security

- Agencies represented:
  - FEMA, DHS, DOJ, DOD, FBI, IACP, IAFC, NAEMT, IAFF, IAEM, and others

What Does NFPA 3000™ (PS) Do?

- Provides information to help mitigate the loss of life and impact to the community during these events
- Empowers communities to plan, respond, and recover from events in a unified, coordinated manner

NFPA 3000™ (PS)
NFPA 3000™ (PS): A Resource for Everyone

Community Leaders
Emergency Management
Public
Healthcare Officials
Non-Governmental Partners
First Responders
Facility Managers

Four Main Concepts

Whole Community
Unified Command

Integrated Response
Planned Recovery

NFPA 3000™ (PS)
How Does NFPA 3000™ (PS) Help You?

- Provides guidance for an entire community’s role in ASHER incidents
- Outlines communication and responder integration
- Identifies resources required for response and recovery
- Standardizes guidance on:
  - Planning
  - Responding
  - Recovering

Risk Assessment

- Identifying Threats
- Analyzing Consequences
- Assessing Hazards & Risks
Active Shooter Hostile Event Response Program

NFPA 3000™ (PS)

- Planning
- Competencies
- Resources
- Management
- Community
- Recovery

Unified Command

- Fire
- EMS
- Law Enforcement
- Emergency Management
- Additional Participating or Coordinating Agencies as Dictated by Incident Needs
Facility Readiness

- Characteristics
- Emergency Action Plans
- Integration
- Notification
- Exercise

Communications Center Support

- Coordination
- Relationships
- Interoperability
Law Enforcement Responder Competencies

- Knowledge Based on Tasks and Competencies
- Federal, State, and Local Requirements
- Threat-Based Medical Care

Fire/EMS First Responder Competencies

- Tasks by Zone
- Integration with Law Enforcement Responders
- Competencies
  - Shooter
  - Vehicle
  - IED
  - Fire
Personal Protective Equipment Requirements

<table>
<thead>
<tr>
<th>Law Enforcement (All Zones)</th>
<th>Fire / EMS (Warm &amp; Hot Zones)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ballistic Vest</td>
<td>Ballistic Vest</td>
</tr>
<tr>
<td>Identifiable garment</td>
<td>Identifiable garment</td>
</tr>
<tr>
<td>Means of communication</td>
<td>Means of communication</td>
</tr>
</tbody>
</table>

Training

Training must include...

- Risk Assessment
- Tests Performed
- Time Available
- Financial Commitment
Warning, Notification, & Crisis Communications

- Organizations should plan for mass notification to the public
  - Social media
  - Direct to public

Continuity of Operations

- Continuity plans must identify and document
- Stakeholders that need to be notified
- Processes that must be maintained
- Procedures for activating the plan including the authority for plan activation
Receiving Hospitals

- Communications
- Victim Identification
- Facility Security
- Recovery Integration

Phases of Recovery

Immediate Recovery

Continued Recovery

Early Recovery
Whole Community

Call to Action: Plan, Prepare & Implement

Learn more about NFPA 3000™ (PS) and how to get involved in the standards development process.

Identify and implement the components that are relevant in your community.

Visit www.nfpa.org/3000 to access resources, information, and knowledge.
Thank you. Questions?

IT’S A BIG WORLD.
LET’S PROTECT IT TOGETHER.

Visit www.nfpa.org/3000news to learn more.
Appendix F. Building Safety and Security Workshop Agenda

National Fire Protection Association (NFPA)
Building Safety and Security Workshop
Thursday - Friday, May 10-11, 2018
NFPA Headquarters

Building Safety and Security Workshop
May 10-11, 2018

Day 1:

7:45 AM  Sign-in and Breakfast
8:30 AM  Welcome and Introductions
Host: Lorraine Carli, Vice President of Outreach and Advocacy- NFPA
8:45 AM  Plenary Session: The Sandy Hook School Shooting- Natalie Hammond
Security Challenges All Around Us- Geoff Craighead
9:45 AM  Break
10:00 AM Plenary Session: Breakout Session Framing: Identify Challenges, Education, Code Implications and Integrations. Overview of each Breakout Group: Rules; Process; Expectations; Group Reporting. Move to Assigned Break Out Groups
10:10 AM Facilitated Breakout Session A: Built Environment Challenges
Facilitated Breakout Session B: Emergency planning for occupants, messaging challenges, coordinating with first responders.
12:15 PM Lunch (provided)
1:00 PM  Plenary Session: Emergency Planning and “Black Swans” Steve Adelman
Decision Making Challenges During a Targeted Violence Event-Joseph Trainor
2:00 PM  Return to Breakout Sessions
Facilitated Breakout Session A: Built Environment Challenges (cont.)
Facilitated Breakout Session B: Emergency planning for occupants, messaging challenges, coordinating with first responders. (cont.)
5:00 PM  Wrap-up Day 1
DAY 2
8:00 AM  Breakfast
8:30 AM  Day 1 Summary; Introduction to Day 2
8:45 AM  Plenary Session:  NFPA 3000 PS Update-John Montes
9:00 AM  Return to Breakout Sessions
Facilitated Breakout Session A:  Built Environment Challenges (cont.)
Facilitated Breakout Session B:  Emergency planning for occupants, messaging challenges, coordinating with first responders. (cont.)
11:45 AM  Working Lunch/Bag Lunch (provided)
1:15 PM  Plenary Session:  Breakout Group Reports – What are the ways forward?
2:00 PM  Next Steps
2:15 PM  Concluding Remarks and Comments from Participants
2:30 PM  Adjourn
Appendix G. NFPA Facebook Community Polls

What do “they” think?

In the weeks leading up to the workshop, NFPA conducted a series of Facebook polls to receive feedback from stakeholders and individuals on some of the questions and issues workshop attendees would be addressing. Although the results of these polls are completely unscientific, they offer a rough snapshot of people’s thoughts and perspectives. Following are the questions we asked and the feedback we received.

QUESTION 1

There have been many suggestions around delaying evacuation when a school alarm is activated to ensure that the system is not being used to lure students and faculty into harm’s way. Which response best describes your view on this idea?

Voting Results

1,100 people voted, as follows:

- Yes, consider a delay: 608 (55%)
- No, it’s a bad idea: 499 (45%)

Comments

† Aren't they saying that you only have 3 minutes to get out safely instead of 17. I know that's typically for type 5 construction, however, what are the numbers for a type 2 or 3 construction that schools usually fall under. What is the typical escape time. Will the delay cause more detriment to the students if its a real fire? These are questions and research numbers I'd like to see first before making such a decision. Both as a teacher in schools and a firefighter who may have to answer such a call, I believe this is an excellent question and concern and I hope that we do the research and come up with a solution quickly.

† I agree. Most schools are constructed of concrete, brick, and metal which are inherently fire resistant. There may be a fuel load(as in papers and furnishings) but a it is typically less than in residential. More research would be necessary to find a possible escape time.

† I know of a educational facility that has narrow hallways and in the path of two exterior doors sits two large labs with chemicals in them and other various items for teaching; this same educational facility has a large open space area and several large classrooms all housed in this one section (there are several sections to this facility) and late at night when it's empty and I have to check the area out when dispatched because a burglary alarm has went off, I have noticed that it has a constant strong flow of air going through the halls and you can feel the pressure when you open an exterior door. Granted it's made of cement mostly, but what would the time frame be for escape if there was a fire blocking any of the exterior doors and one has to go to another location inside a building with such air current?

† Positive alarm sequence with two stage alarms, similar to Canada. Matched with modern technology of IP cameras integrated to provide immediate visual observation of area signaling
alarm by constantly attended location. Then you can have delays. No if just a clock delay of notification.

+ Before things like school shootings and terror alerts; NOTHING superceded fire. Now, with Mass Notification Systems, there's a certain amount of threat assessment before instruction is given.

All that being said - no. It's not worth the risk to the building occupants and first responders - period. And all pulling the alarm for other than fire purposes would do is get the police and fire department there sooner. Not something most intent on doing harm want.

+ If the alarm is in compliance with NFPA 72 with the correct equipment and trained personnel I don't see an issue. But I don't believe too many school districts could afford this set up. I would also want to increase inspection frequencies to make sure they are NFPA 101 complaint to ensure effective evacuation when the delayed alarm is a true emergency that took extra time to activate the notification appliances.

+ And most detectors can be set to alarm verification. The pull stations are the most likely to be used. In that instance - fire alarm covers with independent alarms. Lift cover - alarm goes off - staff comes to inspect. There are also relay options on certain models; so it could trip notification in the security office (or anywhere else). These are used to stop people BEFORE they pull the station, and it's usually a good deterrent. However, if you're intent on doing harm, it only takes seconds to lift the cover and pull the alarm.

+ In my county we currently do it now. Been able to have a delay during school hours to seek out why the alarm is sounding. After school hours the alarm gets sent as it should. We have never had an issue. If after the five minutes what is setting off the alarm is not detected then the alarm is sent for dispatch.

+ How about setting the alarm up similar to a preaction? A sprinkler flow and a smoke detector both have to go before an alarm is sounded. The first stag would still notify the monitoring company to get the fire service coming, but the alarm would not sound in the school in the school until both go. Also cameras in the hallways with monitors in each class room. We came up with ways to make airports safe after 911 we should be able to come up with ways to keep schools safe too.

+ Is there any evidence to suggest that this is an issue, and that such a procedure would have an impact?

Even with this procedure a shooter could wait until lunch, end of day, period change, or any other time students all enter the common areas as regularly scheduled events to go active (no fire alarm needed), or set an actual fire to bypass the procedure, placing the occupants at risk of a fire in addition to the shooter.

+ this is where a voice evac fire alarm could come in because some shooters activate the traditional fire alarm causing unnecessary evacuation and even death from shooting and recent research from the National Fire Protection Research Foundation did a study on fire alarms and people\'students with autism and found that the students with autism responded better to voice evac rather than the traditional fire alarm horn.
In a fully sprinkled school, is it even a big concern. Most fires are suppressed / controlled within minutes. (3 Likes)

It is fundamental to train students and teachers for fire alerts and their bad use and the possible consequences. The digital detection should be with confirmation, so that only one detector cannot generate a complete alarm (with two or more zones in alarm, yes, instead), while the human signal has to immediately generate an alarm, as it is supposed to be real and reliable. This is the general requirement for fire alarms in public buildings in Italy, where I live. The manual alarm buttons, however, are with glass and usually with a glass which has to be broken with a little hammer chained to the box, to prevent improper and unwanted triggering.

I would say use a cross zone so when a manual station is Active the system will need a smoke detector to activate to evacuate the school also the manual station shall have a PAS enabled.

If the school has a fire sprinklers a fire alarm is going off because of a flow switch a delay could be considered being that fire sprinkler already put the hazard out!! Or better idea yet its already code equip all schools with voice evac or instructions to stay put

Key activated manual pull stations in public accessible areas. Regular pull stations in the main office and mechanical areas. No delay on water flow or other automatic detection.

If classrooms have exterior doors as does the Elementary School, I worked at, get them out and away as quickly as possible.

Maybe the system could be intergraded in the security systems alerting the fire alarm to tell you what too do I'm sure it would not be cheep

Remove all pull stations from commons. Only next to panel, main office, boiler room and custodian office. This eliminates the quick pull and go

As in any situation, determining the nature of the emergency is imperative before a decision can be made regarding action.

Implement staff alarms as part of the delay - staff confirm the alarm then after confirmation, the evacuate process is initiated.

We already have pre-action sprinkler systems, use the same technology and software to look for two different identification sources before the alarm sounds. Phase 1 alerts monitoring station - which would tell you to check cameras for intruders or signs of actual fire. (3 Likes)

Not all schools have cameras. I know we don't.

I'm a fireman for the last 45 years ! No delays ! (3 Likes)

My God. Such a hard question. No good answer. How horrible we even need to be asked. (1 Like)


Lock on place and let PD neutralize the threat

Never, we can come up with a new plan but do not delay.

Hmm, 2 stage would be the best option with no delay then, until confirmed
Fire evacuation should be first and foremost.
Not sure this is a question that can be answered only by "yes" or "no"
No delay in older buildings that don’t have multi stage confirmation yes to the with multi stage confirmation
Agreed. I believe that each school should be on a case by case basis. Get FD, PD, and SD together to devise the plan to fit each particular school. (1 Like)
Schools are built fire safe, I can’t ever remember there being a deadly school fire
Delay if pull station activation.
Yes consider a delay
Delay until confirmed.
Delay if voice evac capable
No. Just strengthen gun laws.
Arm Teachers. Criminals don’t obey Gun Laws.
Two stage alarms

QUESTION 2
Fire alarm and security system integration: how far along are we?

Voting Results
196 people responded, as follows:

- Barely started: 122 (62%)
- Making good progress: 74 (38%)

Comments
Having them on the same panel might not be entirely ideal on commercial systems (due to higher risk of failure). But linking two panels together though, can be quite an advancement (when one goes down, it doesn't take everything else with it).
I thought fire alarm systems were to be dedicated.

QUESTION 3
NFPA 101 permits some egress doors to be locked if they automatically release upon alarm/sprinkler/detector activation or when detecting an approaching occupant. Should this
requirement remain in place to allow for unencumbered egress in the event of a fire, or should it change in light of targeted violence incidents?

Voting Results

330 people responded, as follows:
  - Remain in place: 244 (74%)
  - It should change: 87 (26%)

Comments

+ 101 still requires a manual release near the locked door. The exit is still available for use even when the alarms are not activated. I see no problem with how it’s written.

QUESTION 4

In light of targeted violence incidents, many building owners are looking at upgrading their communication systems, locking arrangements, etc. If you were a building owner, which upgrade would you consider your first priority?

Voting Results

176 people responded, as follows:
  - Occupant notification: 86 (49.7%)
  - Building design features: 87 (50.3%)

Comments

+ What do you mean by targeted violence incidents?

  National Fire Protection Association (NFPA) This would include active shooter incidents and other hostile events like the Boston Marathon bombing.

+ Because in this case safety starts at the design stage.