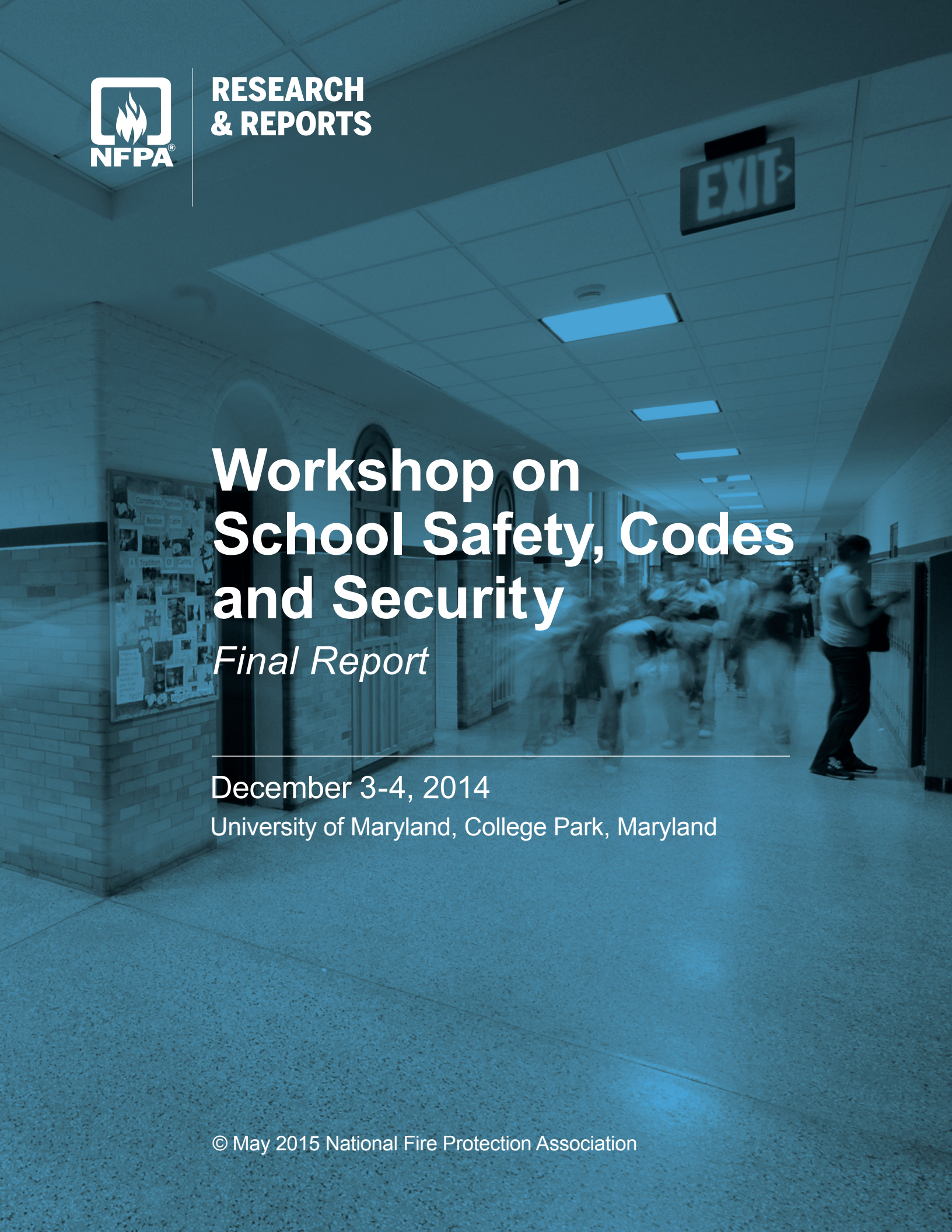

RESEARCH
& REPORTS

Workshop on School Safety, Codes and Security

Final Report

December 3-4, 2014

University of Maryland, College Park, Maryland

Preface and Acknowledgements

This report summarizes the results of the National Fire Protection Association (NFPA) School Safety, Codes and Security Workshop, held December 3–4, 2014, in College Park, Maryland, and sponsored and hosted by NFPA.

The workshop concept had been in discussion for about 18 months before it was held. In the summer of 2014, the NFPA staff identified the broad topics that needed to be addressed, which gave us time to build the content and the agenda and to reach out to the organizations that have expertise in one or more areas of this topic.

The central theme of the workshop focused on school violence, defined as an active threat of some sort that has the potential to harm a measurable segment of the school population. School violence has been linked in some form or another with fire safety. In fact, the most violent school incident in U.S. history (1927) involved the use of fire and explosives. In 2015, discussions about fire safety, security, and the well-being of school occupants occur in various forums and venues at the state and local levels. 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.

These alternative ideas are well meaning but may not always consider the impact on the codes and standards that usually preempt any device, system or operational feature that provides something other than "what the code requires." The workshop engaged a number of diverse stakeholders and, by design, brought in as many ideas as possible over the two-day period to see where that balance, or lack thereof, is currently and where it may need to be in the coming years. The needs of first responders, current code rules, security solutions and what a school system can afford to do are among the areas that this report touches on.

The report does not necessarily provide hard and fast solutions to these challenges, but it does provide direction, especially to the codes and standards development community. Several high-level themes emerged in the report:

- Current codes do not address security threats — security is not a specific scope or goal.
- Current resources are at acceptable levels but are not mandated for adoption.
- There is a need to incorporate door-locking and evacuation and relocation concepts that are contrary to current standards.
- Who would enforce the security-related aspects needs to be determined.
- The security/risk management process must be tailored to the environment.
- There is not a single security threat but rather numerous security threats.
- There needs to be agreement on standardized terminology and definitions for lockdowns/lockouts.
- Every school and college must have a visitor plan.
- All stakeholders — first responders, designers, administrators, and faculty — must be engaged.

Moving forward, it will be incumbent on the various organizations that participated in the workshop, as well as other groups likely to be affected by the information in the report, to review and dissect the content. Changes to codes, standards, procedures, policies and operational tactics are anticipated — likely in the near term. Coordination and cooperation among design professions — architecture, security, fire protection — coupled with input from the various authorities having jurisdiction responsible for ensuring that code provisions are properly applied will be especially important.

Coordination and cooperation among first responders — law enforcement, fire service and EMS — are crucial to ensuring a proper reaction to an event at a school. School administrators and parents must make sure that security needs are not viewed as an afterthought or as a substitute for other safety measures (such as fire safety). Security is in *addition* to the other building and operational elements that help to keep the educational environment safe. It is up to all involved stakeholders to take this report and apply, revise, rethink and consider the blending of security and fire safety.

I want to extend my thanks to everyone who helped with the workshop. NFPA staff who played a key role were Linda MacKay, who managed the invitation letters, preparation of materials, and tracking of the logistical information for the workshop; Holly Roderick, who managed the NFPA contract with the conference center; Tracy Vecchiarelli, who attended our early planning meetings and offered suggestions on content; Debbie Baio, who managed the workshop SharePoint site; and Ron Coté, who reviewed the final workshop templates and provided onsite support at the event.

Erin Klock, Senior Event Manager at the College Park Marriott Hotel and Conference Center, made sure that all our onsite needs — room set ups, audio-visual equipment, food — were accommodated.

Special thanks are extended to Energetics Incorporated's Anand Raghunathan and workshop team members Rebecca Massello, Walt Zalis, and Laurie Aldape for their assistance in facilitating the workshop and preparing this report. They offered expert facilitation, kept the workshop participants engaged, and were simply amazing to work with. Of course, this report would not have been possible without the specialized knowledge and insight contributed by the recognized experts in various aspects of school safety and security. These experts, who took time from their busy schedules to participate in the workshop and share their insight, which forms the basis for this report, are listed in Appendix A.

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1 Introduction

1.1 Overview

Violence on U.S. school and college campuses is a relatively rare occurrence. When these events do occur, however, the consequences can be devastating. School violence is not a new, twenty-first century issue. In fact, the worst and most devastating attack on a school in the United Stated occurred in 1927 in Bath, Michigan, at which thirty-eight elementary school children died in the attack at the Bath Consolidated School. In recent years, tragic acts of violence have occurred at schools across the country, including Virginia Tech, in Blacksburg, Virginia; Sandy Hook Elementary in Newtown, Connecticut; and Oikos University, in Oakland, California. These events underscore the importance of evaluating and enhancing the security of school environments, not only to protect students and teachers, but also to provide the sense of security for parents and to maintain a proper learning environment.

In addition to traditional approaches to curbing violence in schools and universities (e.g., passage of laws and increased understanding of potential triggering events), alternative ideas and solutions have emerged that incorporate technology and building components. For example, expanded use of checkpoints, metal detectors, partial or complete lockdowns, and mass notification systems have been implemented to reduce the likelihood of an attack and to improve response to one. Purpose-built and designed hardware intended to prevent doors from being opened has also landed on the market in the last few years. As new strategies are developed and implemented, existing building, life safety, and fire codes and regulations must be consulted to ensure that safety is maintained from all aspects, including fire safety, security, and other potential hazards.

The NFPA School Safety, Codes and Security Workshop gathered professionals who have expertise in developing appropriate response strategies for school emergency situations. The workshop provided an opportunity for these experts to address the challenge of making schools more secure while maintaining fire, building, and life safety considerations. During the workshop, these experts were asked to ruminate on an active threat scenario (involving guns, knives, bombs) with the following considerations:

- **Multiple hazard planning concepts in schools,** where most current requirements in building, fire, and life safety codes are based on a fire event
- **Fire alarm systems** and the appropriateness and implications of a delayed response for evacuation when the building fire alarm system is activated
- **Significance of a "lockdown" on students and staff** in a school environment, along with the necessary protocols and needed resources
- **Locking hardware** currently in use that is code compliant or noncompliant
- **Tools, procedures, and resources** required by first responders (e.g., fire, police, and emergency medical services [EMS]) to appropriately respond to the situation
- **Notification procedures and technologies that need to be in place** to relay necessary information to all school stakeholders, first responders, and auxiliary parties (e.g., parents, media)

1.2 Workshop Scope and Objectives

A true challenge exists in the school environment in trying to balance the fire safety needs of students and faculty against the equally important need to keep students and faculty safe from a hostile actor. While the goals of fire safety and security safety usually work in concert, building design features and recommended actions can sometimes clash. The National Fire Protection Association (NFPA) School Safety, Codes and Security Workshop, held December 3–4, 2014, at the College Park Marriott Hotel and Conference Center at the University of Maryland in College Park, Maryland, provided a forum to review current understanding related to school safety, to identify gaps, and to propose actions to address those gaps.

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

- What are the practical, code-complying solutions for protecting students and faculty from an active threat involving guns, knives, bombs, and other weapons?
- What are the protocols for first responders (e.g., law enforcement, EMS, and the fire department) who respond to such incidents?
- What challenges face school administrators with regard to implementing building-based (brick and mortar) solutions and operational solutions?
- What security technologies and standards exist that need more recognition?
- If a school security survey or audit form is standardized, what elements from building, fire, and life safety codes need to be considered?

This report captures and organizes the ideas provided by the workshop participants. An emphasis is placed on recommendations to appropriate NFPA Technical Committees, other standards developers, the first responder community, building designers, and school administrators to consider in their future planning activities and use to augment existing school safety plans across the country. NFPA has made this report available on its website. In addition, other resources that were built up leading up to the workshop and further supplemented after the workshop are available at the following website: http://www.nfpa.org/safety-information/for-consumers/occupancies/school-fires/codes-and-security-workshop.

1.3 Workshop Format

The two-day program began with speakers and panelists selected for their substantial knowledge and unique perspectives on school safety. The presentation materials, panel questions, and a summary are given in Appendixes G, H, and I, respectively. Following several moderated panel sessions, participants moved to three facilitated breakout sessions. Each participant was assigned to a specific breakout session in order to (1) engage all contributors, (2) ensure every group would have a good mix of perspectives and backgrounds, and (3) create good group dynamics and continuity of discussion. The groups were organized around the following broad areas:

- Regulatory topics
- Operational topics
- Security topics

The facilitated process on the first day utilized a compression planning technique with a storyboard system. Over a very short time period (few hours), the groups focused on achieving consensus on major organizational objectives while establishing specific priorities and desired outcomes and measures. Prepared questions targeted for each breakout area were posed to the group members during focused brainstorming sessions. The brief responses to the questions were captured on index cards, collected, and affixed to a physical storyboard. If necessary, similar concepts were consolidated. The storyboard allowed all generated ideas to remain visible throughout the workshop for participants to refer to and build upon. After the brainstorming sessions on the first day, the workshop participants prioritized the generated ideas using consensus voting based on their perception of which ideas would provide the best opportunity to improve school safety in each of the topic areas.

The breakout sessions continued into the second day, when participants — in small groups — delved further into the high-priority topics and brainstormed how to design a security survey instrument that could help school and college systems develop security plans for buildings. The workshop concluded with each group presenting highlights from its breakout session.

1.4 Report Layout

The remainder of this document presents the results of the workshop. Section 2 contains the results of each of the three breakout sessions (Regulatory, Operational, and Security). Section 3 discusses the considerations for the security survey instrument. Section 4 provides a summary of the workshop and its findings.

Throughout Sections 2 and 3, participants' output is featured in tables and figures, as well as discussed in the text. This output represents the ideas raised by participants in response to brainstorming questions posed during the breakout sessions. These sections also provide 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 but maintain original intent; some responses have been consolidated to avoid duplication and to identify common themes. The included tables objectively lay out ideas generated by the participants; the included figures expand on a few participant-prioritized ideas that have the best opportunity to improve school safety. The figures attempt to expound on concepts, lay out a notional method for implementing them, and identify some additional information relevant to the idea.

The original input to the security survey is included in Appendix D. The other appendixes provide additional information on the workshop, including the list of participants, a list of acronyms, the workshop agenda, the overview briefing provided at the opening of the workshop, presentation materials, and panel questions and discussions.

2 Workshop Output

2.1 Regulatory Sessions

2.1.1 Introduction

Code developers have used best practices and lessons learned to devise regulations and standards to protect school students, faculty, and administrators from many imaginable emergency, disaster, and fire events. That process generally has proven to be effective in addressing the majority of immediate response situations. The number and consequences of recent violent incidents at schools, however, are reminders that many existing regulations and the prescribed actions either do not materially address that type of event or may directly contradict paths to safety in an active threat scenario and inadvertently place students and staff in harm's way. There is an opportunity to review and adjust regulations and approved actions to better ensure safety and security in schools while broadening the definition of what is considered an "emergency event."

2.1.2 Far-Reaching Regulatory Ideas

Before making any code improvements, there is benefit to brainstorming rules and regulations that would help manage active threat situations—internal[1] or external[2]—on school property, with the assumption that no regulations already exist. Such ideas consider all possibilities and do not need to be reconciled with existing codes and standards for the time being. Some common themes identified include the following:

- Treat schools like a detention/correctional occupancy (e.g., jails) and create building compartments that can contain the threat while enabling effective egress and ingress procedures
- Identify building designs to be included in regulatory frameworks, including the following:
  - Mandating the inclusion of Emergency Communication Systems (ECS) and Incident Command Systems (ICS)
  - Security systems (video) that provide live feeds to inform first responder actions
  - Rapid entry systems to ease ingress
- Share building design and procedures with local law enforcement and first responders, using standard descriptions familiar to everyone
- Establish open dialog among all stakeholders, including school administrators, first responders, law enforcement, equipment manufacturers, regulators (authorities having jurisdiction), and interagency work groups. The following concepts could better inform this dialog:
  - New regulations to help increase the level of training and education among participants
  - Training with the National Incident Management System (NIMS)
  - Collaborative development of emergency response plans

[1]Definition of internal threat—student, faculty, or administrator already on the building premises with a firearm or other weapon with intention to commit a malicious act. This concept is used in the remainder of the report.

[2]Definition of external threat—individual without reason to be on school property attempting to enter building premises with a firearm or other weapon with intention to commit a malicious act. This concept is used in the remainder of the report.

Table 1 presents a wide-ranging list of extensive regulatory code ideas and concepts that could be utilized to help manage an active threat involving guns, knives, bombs, and other weapons.

Table 1: Brainstorming of Codes to Help Manage an Active Threat

Internal and External	Internal Only

• New guidelines for school safety
  ○ Supplement International Building Code (IBC), NFPA *101*
  ○ Provide varying levels of safety
• Make code the minimum level necessary
  ○ Keep simple and effective
  ○ Focus on higher reliability in the long term
• Require every school to complete an emergency response plan
  ○ Include participation of all emergency responders
  ○ Penalty for not participating
• Better dialog among safety equipment users, regulators, and economists
• Mandate Emergency Communication System (ECS)
• Security systems
  ○ Address potential use of enhanced security systems
  ○ Provide live feeds (video) to responders
  ○ New detection system for gunshot
• Require interagency relationships and understanding
  ○ Cross-training
  ○ Working relationships
  ○ Understand compromise
  ○ Break down silos
• Training and education for prevention (culture, tolerance, reporting) and response (for all involved parties/stakeholders)
• More performance-based regulations
  ○ Site- and situation-specific
• Secure building or portion of building to contain threat
• Treat schools like a detention/correctional occupancy (e.g., jail)
• Explore use of facial recognition software
  ○ Provide controls to police
• Use of Incident Command System (ICS) by school, institutional, and public officials
• Share building design with local law enforcement and first responders
  ○ Include standard descriptions to be used by everyone
• Make appropriate changes to NFPA 1, NFPA *101*, and International Fire Code (IFC)
• Develop building compartments to minimize evacuations to outside
• Require all participants to go through NIMS to a certain level: LE (Law Enforcement), FD (Fire Department), EMS (Emergency Medical Services), school employees
• Develop rapid entry systems
  ○ International Code Council (ICC)-NFPA harmony
• Require security vulnerability assessment (SVA) for designs and periodic review
• Consider limiting egress
  ○ Must consider the insider threat
• Develop guidelines for workforce and student protection
  ○ Shelter/isolate
  ○ Identify threats
  ○ Communication
• Harden facility
	• Controlled lockdown
	  ○ Make available only to an authorized person
	• A code that requires assemblies to lock during an active incident
	• Ability to evacuate quickly and easily though secured doors
	• Methods to account for students, teachers, and personnel during an incident

2.1.3 Challenges

The ideas identified in the preceding section need to be reconciled with potential conflicts that could arise with existing codes, standards, and regulations before they can be considered for implementation. Five main conflict areas were identified: (1) safety versus security (e.g., locking versus egress), (2) hardware and devices, (3) behavior, (4) planning, and (5) costs. Regarding safety versus security, changes in codes, standards, and regulations should be flexible enough to allow for new and alternative solutions to be implemented, ensure that lockdown procedures do not lead to noncompliant conditions, and improve accessibility for ingress. Regarding hardware and devices, maintenance and functionality need to be better balanced; conflicts within the code should be resolved, such as fire door requirements versus the desire to prevent latching in some circumstances. Considerations for behavior and planning adjustments include improving the understanding of codes among all necessary parties, the development of evacuation and emergency plans, and better training for fire marshals and other authorities having jurisdiction to approve plans. In addressing many of these considerations, a logical starting point would be to update building, fire, and life safety codes. Table 2 reveals some specific code and standard conflicts that arise when the new ideas listed in Table 1 are under consideration.

Table 2: Potential Areas of Conflict between Novel Code Ideas and Existing Regulations

<table>
<tr><th colspan="4">Safety versus Security</th></tr>
<tr><td colspan="4">

New guidelines for school safety

Supplement IBC, NFPA 101
Provide varying levels of safety

Safety versus security (e.g., locking versus egress)
Access for law enforcement (e.g., doors secured to prevent ingress)
Existing product solutions (e.g., locks, add-ons) do not meet code specifications
Making codes flexible enough to allow for alternative solutions
Authorities having jurisdiction (AHJ) allowing noncompliant security products
Lockdowns creating noncompliant conditions
Need to allow door to be key-opened from outside
NFPA 101 and IBC not scoped to address school security issues
Delayed evacuation during fire alarm
15-second evacuation delay after a fire alarm activation putting students and staff in harm's way by providing an active threat an opportunity to exploit the delayed exit
Accessibility requirements lacking
Operational responsibilities

Administrators, first responders (e.g., EMS, fire, and police)

</td></tr>
<tr><th>Hardware and Devices</th><th>Behavior</th><th>Planning</th><th>Cost</th></tr>
<tr>
<td>

Maintenance and functionality

If code-compliant devices used, must be maintained

Conflicts with code
Putting locking devices on rated fire doors
Security devices that violate other provisions creating other hazard
Fire door requirements versus desire to prevent latching

</td>
<td>

Need to change behavior

Individual responses for personal safety

Need to understand the codes

Law enforcement, first responders, and school personnel need to be on the same page

Need to understand importance and difficulty of balancing fire safety with security

</td>
<td>

Evacuation plans

General crisis planning and participation

Code-required fire marshal approval of lockdown/emergency plan

Need to incorporate law enforcement
Training for fire marshals on how to approve plans, what to look for

</td>
<td>

Outstanding fire record of schools making it difficult to "sell" upgrades

</td>
</tr>
</table>

2.1.4 Regulatory Code Changes

The preceding sections present novel possibilities for making schools safer from a regulatory standpoint, along with compliance challenges with the existing codes. To address these challenges, two pathways exist: (1) modify existing practical, code-complying brick-and-mortar solutions/ protocols to enhance methods for protecting students and faculty from an active threat involving guns, knives, bombs, and other weapons or (2) develop new requirements that ensure that building and fire codes can both address traditional life safety issues and overcome the challenges from an active threat scenario. Table 3 lays out these opportunities; the dots (•) to the right of selected ideas represents a participant-identified priority that could rectify the potential conflict between regulatory design features and recommended actions as well as significantly improve school safety from an assault/attack.

Table 3: Improving the Current Regulatory Standards

Existing Code Improvements	New Code Development Areas

• Code coordination and modification •••••••••••••••• (16)
  ○ Modify existing codes (NFPA 1, NFPA *101*, NFPA 730, IFC, IBC)
  ○ Consider security codes versus security provisions
  ○ Rewrite/rethink code egress to better consider security
  ▪ NFPA *101*: consider door hardware, contingency operations
  ▪ NFPA 730: coordinate security for egress
  ▪ NFPA 1: fire protection not to impede egress
  ○ Amend the IFC or IBC to include minimum requirements for school security
  ▪ Base framework
  ▪ Design guidelines
  ○ Fix conflicts identified in A2 (Assembly Occupancy)
  ○ IBC/IFC/NFPA 1/NFPA *101*: consider if compromise is acceptable
  ▪ Locking
  ○ NFPA *101*: Contingency operations
  ○ NFPA *101*, *NFPA 5000*, IBC: Hardened facilities
• Require performance-based design •••• (4)
  ○ Integrated Rapid Visual Screening (IRVS)
  ○ Locking language
• Counteract costs •• (2)
  ○ Insurance incentives
  ○ Withholding of federal funding
  ▪ U.S. Department of Homeland Security (DHS) grants
  ○ Lower liability
• Modify existing occupancy codes
  ○ Operational requirements for hardware
• Modify existing building compartments
• Need to have better standard of code enforcement across jurisdictions
• Require compliance with existing codes
• Existing conditions for increased security
• Require schools to have the lockdown approved by the authorities having jurisdiction
	• Develop a reference standard or recommended guideline •••••••••••• (12)
	• Code exception for lockdown procedures •••••••••• (10)
	  ○ With definitive procedures in place
	  ○ With life safety mechanisms in building (e.g., sprinklers, fire alarms)
	  ○ With cooperation of law enforcement input
	• Add "best practices" to code in annex or appendix •••••••••• (10)
	• Develop new door-locking procedures and technologies ••••••••• (9)
	  ○ Locked doors with supervision
	  ○ Remote control
	  ○ Automatic controls
	• New design "guidelines"
	• Construction requirements
	  ○ No windows in doors
	  ○ No big side lights
	  ○ Tighten up

Note: Each dot (•) represents a participant-identified priority that could rectify the potential conflict between operational protocols and recommended actions as well as significantly improve school safety from an assault/attack.

2.1.5 Priority Areas

Of the ideas listed in Table 3, five were identified as the most important for regulatory improvements:

- Coordinating and modifying existing codes to address conflicts between security and safety, egress, and locking procedures. Applicable codes include the following:
  - International Building Code (IBC) and International Fire Code (IFC)—include minimum requirements for school security, including a base framework and design guidelines; allow for hardened facilities
  - NFPA 1, *Fire Code* — extract or build on content from NFPA *101*

  - NFPA *101, Life Safety* — consider door hardware needs for security and contingency operations; allow for hardened facilities; include contingency operations
  - NFPA 730, *Guide for Premises Security* — coordinate security considerations for egress operations
  - *NFPA 5000, Building Construction and Safety Code* — allow for hardened facilities
- Enabling code exceptions for lockdown procedures, with definitive procedures and life safety mechanisms
- Developing a "best practices" code annex or appendix
- Developing new door-locking procedures and technologies, including remote and automatic controls
- Requiring performance-based design (PBD) in locking language; including a review of NFPA 730 and integration of a PBD option; review Integrated Rapid Visual Screening (IRVS) to determine initial or relative risk and resilience for buildings, based on visual inspection only

Because there is significant overlap with many of the priority areas, they have been consolidated and summarized into two overarching categories, which are described in detail in Figures 1 and 2:

- **Modify Regulations of Physical Needs** (Figure 1): Updating and retrofitting existing doors and other equipment with cost-effective replacements can improve levels of security and life safety on a school premises.
- **Modify Regulations of Operational Needs** (Figure 2): Regulatory codes also play a part in emergency planning. When a review is executed, the following situational topics should be included: special event and afterhours; crowd managers; involvement of law enforcement in emergency planning with regard to the fire code; flexibility in planning and executing drills; and notification of parents.

FIGURE 1: Modify Regulations of Physical Needs

Description: Ability to retrofit existing doors with cost-effective devices that will provide acceptable levels of security and life safety

Safety versus security trade-offs: Training for all staff (including substitute teachers) on lockdown and operation of locking devices; emergency operations plan to include locking/unlocking methods and acceptable circumstances for deployment

Implementation Plan

Regulatory and Standards	• Code change allowing existing schools to have security devices (SD) that require additional operation to unlatch; limited to doors that do not require panic hardware • Devices operable from access side and egress side of the door; mounted a maximum of 48" above the floor and operable under all lighting conditions without a key, a tool, special knowledge, or effort (last 2 items require flexibility)
	• SD not to inhibit egress or required door operation under normal conditions
	• SD used on fire doors to meet NFPA 80 (operation, closing, latching, listed for use on a fire door)
	• Annex/handbook/commentary clarifying what is/is not special knowledge or effort
Major Tasks	• Tentative Interim Amendment (TIA) to establish immediate requirement
	• Change to NFPA 1, NFPA 80, NFPA *101* (among others)
	• Change to IFC
	• Change to International Existing Building Code (IEBC)
Performance Targets	• Code change for 2018 editions of NFPA/ICC Codes
	• TIA (Under NFPA TIA process, earliest to make changes is August 2015)
	• Annex/handbook/commentary language
	• Awareness
Adoption	• Information about options and requirements to schools, design professionals, and authorities having jurisdiction
	• Webinars/articles to increase awareness

Other Issues

Stakeholders	• National Association of State Fire Marshals (NASFM)
	• International Fire Marshals Association (IFMA)
	• Fire Code Advisory Council (FCAC)
	• Builders Hardware Manufacturers Association (BHMA/DHI)
	• NFPA Educational/Day Care Technical Committee
Resources	• None provided
Further Concepts	• Hardening of other areas (e.g., entrances, glazing)
	• Design of buildings for relocation of occupants versus evacuation
	• Student protection from issues other than security problems (e.g., environmental, natural, or man-made disaster)
Other Public Applications	• Some opportunities depending on training, emergency plans, and other conditions

FIGURE 2: Modify Regulations of Operational Needs

Description: Emergency planning to also cover special event and afterhours, crowd managers; involve law enforcement in emergency planning with regard to the fire code; flexibility in planning and executing drills; consider notification of parents

Safety versus security tradeoffs: None provided

Implementation Plan

Regulatory and Standards	• Emergency planning to also cover special events and afterhours, crowd managers
	• Involvement of law enforcement in emergency planning with regard to the fire code
	• Flexibility in planning, executing drills
Major Tasks	• Involvement of school administrators, law enforcement organizations, and other stakeholders in code development
Performance Targets	• To get initial proposals into next editions of NFPA 1, NFPA *101*, NFPA 730, NFPA 731, *NFPA 5000*
	• To get initial proposals into next editions of IFC and IBC
Adoption	• None provided

Other Issues

Stakeholders	• Fire and building code development experts
	• Interested law enforcement and school safety and security personnel
	• International Association of Chiefs of Police (IACP)
	• National Association of School Safety and Law Enforcement Officers (NASSLEO) and National Association of School Resource Officers (NASRO)
Resources	• NIMS standards
	• Safe and drug-free schools, U.S. Department of Education
	• Recommended/best practice tools that integrate school violence scenarios
Further Concepts	• Transition period to implement new requirements
	• "Reasonable accommodations" of other requirements, such as Americans with Disabilities Act (ADA) implementation, into updated planning tools; emergency planning a must for all occupants
	• New construction versus existing
Other Public Applications	• Yes [*Editor addition: NFPA's Emergency Evacuation Planning Guide for People with Disabilities*]

2.2 Operational Sessions

2.2.1 Introduction

Schools face a multitude of hazards and threats, including hostile intruders. Each school needs to establish, adopt, practice, and follow a well-vetted and comprehensive school emergency operations plan (EOP) so that any crisis response is executed without delay. In many cases, existing EOPs need to be adjusted to better account for active threat incidents. At times, competing design features and recommended actions of EOPs can be in direct conflict when addressing emergency operational procedures in schools. With new technologies becoming available, best practices for safety have become less and less clear. As such, specific operational procedures for a school emergency (considering all hazard and threat types) need to be reviewed, including how the protocols are affected by existing building and fire codes.

2.2.2 Far-Reaching Operational Ideas and Challenges

As a first step in reevaluating EOPs, laying out the far-reaching protocols that would be most helpful in preventing or reducing harm from both external and internal active threats is very beneficial. Because EOPs are applicable to school students, faculty, officials, and administrators, who are already at the scene of an event, and to first responders, who usually arrive later after a distress call, there is benefit to laying out both vantage points and understanding the broad challenges to implementing them, as seen in Tables 4 and 5.

Table 4: Protocols and Challenges for First Responders during an Active Threat

Unconventional First Responder Procedures		

Internal
• Unified command drills and training
  ○ Common language and predefined roles
• Multiple emergency info systems (alerts, message boards, TVs)
  ○ Timely and accurate info a primary priority
• Accessibility
	Both Internal and External
	• Interoperability, external and internal between law and fire
	• Law enforcement organizations/agencies to conduct preplanning for active shooter with fire departments
	• Walk-through of school
	• Meet with city/town engineering management staff; secure approvals on operational plans
	  ○ Room constructed of steel (or other hardened materials, composites)
	  ○ Practice relevant drills
		External
		• First responders advanced access to all door locks/auto systems/controls
		• Release of drones
		  ○ Real-time data collection

Potential Areas of Conflict to Implementing Unconventional First Responder Procedures		

• Complex security levels require school officials and emergency personnel to coordinate to isolate critical issues
  ○ Hardware, door locks, medical issues; working closer together to solve issues
• Multiple emerging information systems
  ○ Cost
  ○ Maintenance (upgrade)
  ○ Staff training
  ○ Pre-selected messages
  ○ Power failure
• Lack of leadership/coordination between school administrators and law enforcement for training exercises
• Funding: validation of funding requirements, whether standard or nonstandard
• Time: Many events usually have ended by the time first responders arrive. What happens before their arrival and the point at which they enter the premises?		

Table 5: Protocols and Challenges for Staff and Administrators during an Active Threat

Unconventional Procedures for School Staff and Administrator		

Internal
• Defense: train school/faculty on key self-defense mechanisms that they can use to protect themselves and their students
• Ability for classroom teachers to properly secure rooms with dead bolt locks in a timely manner
• Preplan and practice evacuation of special needs students
  ○ Have written plans
• Allow for delayed evacuation via positive alarm sequencing
• Mark the "Hide" safe areas
	Both Internal and External
	• Challenge or test plans
	  ○ Do not just "check the box"
	• Open "clear" communication
	  ○ Verbal (voice announcement)
	  ○ Visual
	  ○ Audible (alarm only)
	• Involve parent representatives in planning and drills
	  ○ Responders
	  ○ School administrators
	  ○ Conduct all-hazard risk assessments — not just for security
	• Allow for partial evacuation depending on location of intruder
	  ○ No effective communication
	• Recognition and prevention training for the staff (recognize signs of a troubled student)
	• First responder/school staff coordination/training
	  ○ Regular tabletop exercises for policy group/administrators
	  ○ Training on social media and emotional impacts for administrators
	• ICS training for teachers should be required
	  ○ ICS training and drills using ICS structure: common language and predefined rolls
	• Identify and implement incentives for both on-site problem solving and training and certifications
	• School certification: audit on readiness
	• Market existing materials; millions spent on school safety; reams of publications not used
		External
		• Communication system that provides all staff with accurate/timely info on status of situation

Potential Ares of Conflict in Implementing Unconventional Procedures for School Staff and Administrator		

Internal
• If teachers wanted to be first responders, they probably would not be teachers
• Delaying alarm not permitted by NFPA
  ○ Tradition may affect the idea of delayed evacuation
  ○ Done only in institutional occupancies
	Both
	• Event amnesia and proximity of event
	• "Too many cooks in the kitchen" with different knowledge levels
	• Mandates, statutes, liability — all unclear
	• No regulatory compliance
	  ○ Law/fire/EMS/school
	  ○ Lack of time/competing priorities/not a core competency
	  ○ What gets measured gets done — requires accountability
	  ○ Lack of communication because it is not mandated or enforced
	• Lack of leadership/ coordination between school administrators and law enforcement for training exercises
	• Funding: validation of funding requirements, whether it is standard or nonstandard
	• Time: many events usually have ended by the time first responders arrive. What happens before their arrival and the point at which they enter the premises?
		External
		• Time and weight
		  ○ Need requirements and standards, not just guidelines
		  ○ Prevent, mitigate, prepare/plan, train, exercise, respond, and recover

2.2.3 Operational Protocol and Procedure Changes

In an effort to reconcile novel ideas and their associated implementation challenges, Table 6 lists the opportunities, and the numbers in parentheses are the number of participant-identified priorities that could improve the existing code-complying operational procedures in schools, as well as opportunities to make schools safer by adjusting codes to accommodate new operational solutions. In some cases, new operational procedures will require a modification to existing codes, while other procedures may require an entire rewrite of specific code provisions.

Table 6: Operational Updates

Updates to Existing Procedures	Protocol Development Areas

• Effective notification messaging ••••••••• (9)
  ○ Code compliant — use of voice and text communication systems for reflexive response ••• (3)
• Enforcement of existing codes •••••••• (8)
• Weapons are common issues: "Go to jail" policy for a criminal act (strengthen or use as deterrent)
• Emotional assistance — helping kids in need •••• (4)
• Common access to fire alarm pull stations; amend to remove or restrict access except for staff and at hazardous locations •••• (4)
• Best practices and standard operating procedures ••• (3)
  ○ Standard entrance placards • (1)
  ○ Require all-hazard/multi-hazard emergency plan development and drills for use in group educational activities just as in day care, hospitals, etc. •• (2)
• Modify classroom locks to have more than one motion/action to secure classroom; use of stand-alone dead bolt ••• (3)
• Expand required Educational Opportunity Programs to include coordination with county/city on mass casualty/fatality plans, family assist, critical response team plans, staging, etc. ••• (3)
• Identify who initiates a lockdown and its execution • (1)
	• Require exercises for leadership (administration) and require emergency training in student/teacher curriculum •••••••• (8)
	• Emerging smart technology applied to school security (unencumbered, unified, internet enabled) • (1)
	  ○ Transfer of knowledge technology from war-time use to civilian use • (1)
	  ○ Literature review of new technologies — what's out there now or being developed? •••••••• (8)
	• Develop specific guidelines/procedures for lockdown requirement — code breaks down in fire evacuation; plans can do the same •••••• (6)
	• Smart locks: Let people in who belong and keep out people who do not •••••• (6)
	  ○ External visual security systems tied to face recognition database
	  ○ Door locks: current rules for specific locks permitted/required for every school door and codes; allow school to address or approve specific locks •• (2)
	  ○ Be open to changing codes to allow use of special locking devices •• (2)
	  ○ Lobby double-lock entrances
	• Identify action for bomb threats •••• (4)

Note: Each dot (•) represents a participant-identified priority that could rectify the potential conflict between operational protocols and recommended actions as well as significantly improve school safety from an assault/attack.

2.2.4 Priority Areas

The top five development priorities are listed below. Some ideas, noted in sub-bullets in Table 6, were consolidated into broader operational opportunities. These development priorities are further detailed in Figure 3 through Figure 7. In addition, while smart locks were identified as a priority, they are not discussed further due to workshop time constraints and focus on other topics. This concept should be retained for future research/expansion.

- **Develop Specific Guidelines/Procedures for Lockdown Requirement** (Figure 3): Currently, no guidelines or accepted definitions for lockdowns exist. Therefore, conflicts associated with egress provisions and other codes can be prevented only after universally accepted protocols are established.
- **Review of New Technologies: What's New and What's Being Developed?** (Figure 4): Evolving technology can affect how emergency operational procedures are executed in school settings. New technology can help improve school security, as well as help update school security codes and requirements.
- **Effective Notification Messaging** (Figure 5): Information delivery is critical for any emergency situation to limit confusion and improve response to a school threat or hazard.
- **Enforcement of Existing Codes** (Figure 6): One of the more basic, but also crucial, steps to improving school security while remaining code compliant is to ensure that existing codes are enforced.
- **Require Exercises for School Administrative Leadership and Emergency Training in Student-Teacher Curriculum** (Figure 7): School faculty, staff, and officials are part of a culture of safety and security. By including training as part of the student curriculum, emergency personnel and school stakeholders can react appropriately during an event.

FIGURE 3: Develop Specific Guidelines/Procedures for Lockdown Requirement

Description: Currently there are no standard guidelines or content requirements for lockdown procedures. Also, there are no common definitions for this subject. Once definitions and minimum guidelines are established, controls will be in place to prevent conflicts with egress provisions and life safety codes.

Safety versus security trade-offs: A balance between safety and security needs to be determined and agreed upon (e.g., in Minnesota, statute requires 5 fire drills and 4 lockdown drills per school year).

Staging: Single coherent message from an authoritative source. Staging cannot interfere with operations.

Implementation Plan

Major Tasks	• Evaluate/reduce conflicts with life safety codes
	• Clearly define lockdown-related terms
	• Develop basic guidelines and framework but maintain flexibility for specific facilities and circumstances
	• Develop periodic testing and maintenance requirements for security systems
	• Establish requirements for effective and reliable communications systems (building wide and interagency)
Interchangeability for All Types of First Responders and School Staff	• Plans developed with input and assistance from law enforcement, fire, and school staff
	• Common terminology will help, as well as standard guidelines, to make general lockdown plans understandable among agencies, so all will know what to expect
	• Primary decisions for school faculty
Performance Targets	• Properly and clearly define terms and concepts
	• Post-drill debriefing, effective communications, and evaluation of drill results and timelines
Adoption	• Nationally recognized standard or best practices
	• Funding and time
	• Flexibility based on unique site-specific circumstances

Other Issues

Stakeholders	• Law enforcement
	• School administrators and staff
	• Fire, EMS, and emergency management
	• Parents
Resources	• FBI video "Run. Hide. Fight. Surviving an Active Shooter Event"[3]
Further Concepts	• Procedures for fire alarm activation during a threat/lockdown condition
Other Public Applications	• Applicable to other occupancies

[3] Federal Bureau of Investigation, "Run. Hide. Fight. Surviving an Active Shooter Event," online video, 5:56, accessed February 29, 2015, http://www.fbi.gov/about-us/cirg/active-shooter-and-mass-casualty-incidents/run-hide-fight-video.

FIGURE 4: Review of New Technologies

Description: Technology continually changes; improvements affect procedures, systems, and equipment used in school security. Additionally, operational updates enable the modification of technology requirements. Thus, technology selection and purchases need to be pragmatic and relevant.

Safety versus security trade-offs: Technology offers opportunities to augment existing drills for fire safety while reducing the number of required drills (e.g., interactive video instruction in classrooms enhances drill experience).

Implementation Plan

Major Tasks	• Regular and periodic review of technology systems tied to the following: ○ Public communication/responder applications ○ Social media applications/popular use ○ Review of communications content and use and legal considerations
Interchangeability for All Types of First Responders and School Staff	• Compatibility of users with the following: ○ Devices ○ Software ○ Applications ○ Social media
Performance Targets	• Interoperability of communications equipment and software • Adoption of a unified messaging solution common among all stakeholders
Adoption	• None provided

Other Issues

Stakeholders	• Students, parents, public: determine which devices and software and social media they use • First responders • Teachers, administrators, school officials • E-911 system dispatchers
Resources	• American Society for Industrial Security (ASIS) International — standards on risk assessment and other relevant topics • ASIS International — "Facilities Physical Security Measures Guideline," 2009 • American National Standards Institute (ANSI) — standards from the following organizations: ○ Consumer Electronics Association ○ Cellular Telecom Industry Association ○ Telecommunications Industry Association ○ Alliance for Telecommunications Industry Solutions (ATIS)
Further Concepts	• None provided
Other Public Applications	• None provided

FIGURE 5: Effective Notification Messaging

Description: Timely and accurate information is critical in managing an incident; looking for operational updates and new designs for messaging systems, concepts, and contents that improve the efficiency of delivery should be an ongoing objective.

Safety versus security trade-offs: Considerations for:

- Occupants versus intruder
- Message content and delivery method

Staging: Unified command public information officers (PIOs) determine information to distribute to parents and radio stations from IC (Incident Command) to and from school security and teachers.

Implementation Plan

Major Tasks	• Template of common messages/KISS ("Keep It Simple, Stupid") • Create team, identify responsibilities • Train, drill • Modify plan via lessons learned • Upon police arrival, system controls all internal messaging
Interchangeability for All Types of First Responders and School Staff	• All PIOs (police, fire, schools) should know the situation — interoperable radio/communication channels
Performance Targets	• Number of drills per year • Feedback surveys (students and teachers) • Message sent/received time lapse
Adoption	• National guidelines • School/district/state buy-in

Other Issues

Stakeholders	• RD (radio discipline for all groups) • School office assistants • Safety/security • Teachers/students • Special needs • Parents/Parent-Teacher Association (PTA) representatives
Resources	• Best practices/technical reviews • Social media • Community networks
Further Concepts	• This does not cover all hazards (weather)
Other Public Applications	• None provided

FIGURE 6: Enforcement of Existing Codes

Description: Current codes recognize new products and designs; however, they must be tested or validated for use in those products and designs. Products must be approved by all affected agencies, such as testing/listing agencies (e.g., UL) and fire departments. All existing elements need to be tested and inspected to ensure that they are functioning as intended and designed.

Safety versus security trade-offs: No specific trade-offs — safety and security need to be integrated.

Staging: Send out to stakeholders and review inputs, revise as necessary. Finalize and adopt, notify, educate, and train as necessary, then report.

Implementation Plan

Major Tasks	• Evaluate new and existing technology
	• Properly and consistently enforce codes
	• New and existing strategies — evaluate and reevaluate
	• All stakeholders to buy in and actively participate
	• Integrated preplanning, testing, and drills
Interchangeability for All Types of First Responders and School Staff	• Tailored to the incident
	• Must include case-by-case flexibility
	• Fundamental training enhanced to be case specific
	• Key players identified and trained accordingly
	• To enhance interchangeability, adopt common terminology (one name, one code, universal)
Performance Targets	• Quality control and oversight from higher-tiered agencies to ensure state expectations/compliance
Adoption	• Provide fundamental education as to why code enforcement is important
	• Must have multi-agency leadership-level commitment to ensure success

Other Issues

Stakeholders	• Educational agencies
	• Fire/EMS
	• Law enforcement organizations, police departments, and DHS
	• Political entities/lawmakers
	• Industry — product manufacturers and contractors
Resources	• Equivalency clause in every code
	• Utilize existing procedures that states have already created
	• Utilize established industry testing standards
Further Concepts	• No single agency should act without working with other agencies to check for unintended consequences or problems
	• Training does not mistakenly teach occupants to violate codes (e.g., barricading doors)
Other Public Applications	• Can be tailored and/or modified as necessary for other public spaces

FIGURE 7: Require Exercises for School Administrative Leadership and Emergency Training in Student-Teacher Curriculum

Description: Create a culture of safety and security among students, teachers, and administrators at all levels through education and training, with the goal of institutionalizing the knowledge of emergency procedures and risk-reduction behaviors.

Safety versus security trade-offs: More time spent on emergency training and exercises to limit the impact of trade-offs.

Implementation Plan

Major Tasks	• Continue regular drills
	• Integrate additional emergency procedure training in student-teacher coursework and certification programs
	• Require training and exercises for administrators at all levels
	• Coordinate with local fire, law enforcement, and other partners
Interchangeability for All Types of First Responders and School Staff	• Use a standard template to develop the base plan and design specific exercises
Performance Targets	• All schools have an all-hazards emergency plan in place
	• Teachers and administrators are familiar with emergency procedures
	• Drills and exercises are successfully executed
	• Orientation for new teachers and administrators includes the emergency plan
Adoption	• Ensure ownership in the plan among stakeholders
	• Include in administrators' performance appraisals

Other Issues

Stakeholders	• Administrators, teachers, and students at all levels; public safety and emergency management; and parents
Resources	• Current codes and standards
	• Best practices
	• Federal Emergency Management Agency (FEMA), *Comprehensive Preparedness Guide 101*
	• Homeland Security Exercise and Evaluation Program (HSEEP)
Further Concepts	• None provided
Other Public Applications	• None provided

2.3 Security Sessions

2.3.1 Introduction

Schools use a myriad of practices and equipment to ensure the safety of students and staff in buildings and on the premises. For example, schools often utilize locked or monitored doors or gates to control access to campuses. Some schools are mandated to use metal detectors or security cameras or to limit access to social networking websites in order to monitor or restrict students' and visitors' behavior on school premises.[4] Schools continue to use traditional safety practices such as fire drills, but more schools are implementing lockdown drills as well.[5]

2.3.2 Definition of "Lockdown" and Implementation Method

Lockdowns are used to protect and keep building occupants as safe as possible from a potential threat such as the presence of a shooter.[6] The actionable watchword "lockdown" is defined by various sources; in general terms, it denotes a security measure taken during an emergency to prevent people from leaving or entering a building. In a public building such as a school, it also can describe a scenario in which occupants are further prevented from leaving or entering a space (e.g., a classroom) within the building. Lockdown is one of the recommended actions espoused by security consultants and law enforcement; however, there is a need to define it explicitly compared to the provisions found in legally adopted, binding, and enforced building, life safety, and fire codes. Table 7 lays out different implementations of a lockdown in response to an external versus an internal threat from the vantage point of a variety of school safety advisors; the sublists give the resources necessary to conduct a lockdown.

[4]U.S. Department of Education, National Center for Education Statistics, "Fast Facts: School safety and security measures," accessed February 19, 2015, http://nces.ed.gov/fastfacts/display.asp?id=334; U.S. Department of Education, National Center for Education Statistics, "Indicators of School Crime and Safety: 2013," NCES 2014-042 (2014), http://nces.ed.gov/programs/crimeindicators/crimeindicators2013/index.asp.

[5]Katherine Lee, "School Safety – What Parents Need to Know About School Lockdown Drills," *about parenting*, accessed February 19, 2015, http://childparenting.about.com/od/healthsafety/a/School-Safety-What-Parents-Need-To-Know-About-School-Lockdown-Drills.htm.

[6]Katherine Lee, "What is a School Lockdown Drill?" *about parenting*, accessed February 19, 2015, http://childparenting.about.com/od/healthsafety/g/What-Is-A-School-Lockdown-Drill.htm.

Table 7: Lockdown Implementation Actions

External Threat	Both	Internal Threat

• Institute barriers to physical movement
  ○ Barriers to both ingress and egress
  ○ Hardware, procedures, understanding, and related actions
• Keep unnecessary persons out and grant essential persons access
• Secure building perimeter
	• Lock building or room against entry
	  ○ Code-complaint egress lock
	• Lockdown is secure in place
	  ○ Barrier to contain space
	  ○ Locking device from interior offers egress
	  ○ Process for executing accountability for implementation
	• Lockdown is one type of security measure that may be appropriate for some shelter/secure-in-place applications
	• Place barriers between threat (shooter) and others
	• Execute important planning and training for lockdown (e.g., determine hiding locations, establish methods to start and stop lockdown orders)
	• Keep people in a safe place
	  ○ Training, planning, and good design
	• Secure building inside and outside to secure students and threat
	  ○ Locking mechanisms (physical)
	  ○ Communication
	• Implement shelter in place (i.e., implement security of people in a given space or building from a threat of violence or a weather-related incident)
	• Implement defend in place (i.e., defend the security of people in a given space from an internal threat)
	• Provide access for authorized personnel
		• Protect/secure/shelter in place
		  ○ System to notify of ingress and egress of personnel
		  ○ Barriers
		  ○ Plans and training
		• Implement standard practices and emergency protocol, which are school specific
		• Keep students in safe place, away from active threat
		  ○ Locks and doors
		  ○ Trained staff
		  ○ Means of communications
		• Restrict movement to minimize the exposure of victims to dangerous element/threat
		  ○ Public announcement system
		  ○ Locks and doors
		• Secure rooms
		• Lock down occupants secured in space and hidden from view
		  ○ Locking system
		  ○ Signal/reason for lockdown
		  ○ Communication with outside
		  ○ Someone in charge
		• Alternative to evacuations
		  ○ Situation specific
		  ○ Hardwired communications/ notification system
		  ○ Access barriers
		• Procedures for ingress to or egress from building or classroom
		• Need to define/signal when room is secured

2.3.3 Challenges

Evacuation drills prepare staff and students to leave a building quickly in an organized fashion in the event of danger when conditions outside the building are safer than the conditions inside the building. Although these drills are practiced, an emergency situation itself will be stressful and chaotic. Lockdowns elevate the frenzied nature of the situation by preventing individuals from leaving or entering a building(s) or the campus, keeping everyone at the center of the commotion. Trying to ensure student and faculty safety in a lockdown from an active threat creates a number of challenges and obstacles. Table 8 lays out some of the most important ones.

Table 8: Challenges to Ensure Student and Staff Safety During a Lockdown

Broad Challenges	

• Difficult to identify true risks
• Unclear decision whether to lock down or evacuate action in some situations
  ○ Fire
  ○ Delayed entry by first responders
  ○ Communication failure
• Challenging to plan for a threat
• Difficult to perfectly execute a plan during an active threat
• Tough to maintain fluidity during an active threat situation
• Difficult to empower staff/teachers to make decisions without situational knowledge
• Devices to lock out threat may be used to lock in threat
• Tough to ensure that everyone is secure
• Inability to manage panic/pandemonium domino effect
• Conflict with egress protocols and lockdown limits security measures
  ○ A potential safety issue could be created by implementing improper security protocols
• Difficult to align threat intelligence with appropriate and timely action
• Complex to incorporate communication, procedure, and flexibility to respond by threat type with the available resources
• Lockdown is a viable option only for very specific threat types
• Lockdowns could be used by intruders to their advantage
• Inability to acquire accurate information
• Avoiding confusion
• Quickly deploying appropriate resources to neutralize the threat
• Lockdown may provide false sense of security rather than encourage dynamic response
• Problematic when lockdown occurs at the start of, end of, or between classes
  ○ Accountability
  ○ Inside/out
  ○ Training
  ○ Notification of parents and others
• Complicated to determine a lockdown priority over fire
  ○ Ignore fire alarm
  ○ Mental importance to distinguish fire alarm versus nefarious situation
	• Challenge to maintain safe area(s) as conditions change
	• Anticipating how conditions will change and whether revised response can occur
	• During threat changes
	  ○ Poor communications with locked-down locations
	  ○ No contingency planning
	  ○ Leadership failure
	  ○ Response to an active threat prohibits response to new threat
	• Focusing on lockdown does not consider the dynamic nature of threats and relies on awareness and training to be successful
	• Inability to recognize a threat in time to prevent an attack
	• Educators are not trained as incident managers; no one in charge before the first responders arrive
	• Preparing internal team to act effectively until emergency responders arrive
	• Complacency of administrators and staff in being able to interpret the threat and react to the situation
	• Lack of universal lockdown definition has schools ineffectively attempting to resolve situations
	• Poor connectivity (communication) with locked-down locations
	  ○ Threat has changed and incident managers are not aware of that
	  ○ Systems failure
	  ○ Multiple conflicting signals
	• Using the fire alarm system to create targets (e.g., University of Central Florida incident[7])
	• Unauthorized use of lockdown for other purposes:
	  ○ Nuisance threats
	  ○ Bullying
	  ○ Harassment
	  ○ Disruption of classes
	• Difficult to maintain emergency egress during lockdown
	• Locking mechanisms that prevent egress are problematic
	• Recognize security is a process that needs the following:
	  ○ Locks/hardware
	  ○ Plans
	  ○ Responses to manage the process
	• Focus on lockdown makes schools less safe/responsive to more frequent violent incidents

[7]Thomas Durante, "The moment police kicked in the door of would-be UCF gunman's dorm and found him he had committed suicide before he could finish his deadly checklist that ended with 'give them hell'," *Daily Mail*, March 20, 2013, http://www.dailymail.co.uk/news/article-2296174/James-Seevakumaran-University-Central-Florida-gunman-hell-checklist.html.

2.3.4 Security Technology and Standard Changes

Section 2.3.3 identified some of the critical challenges to keeping schools safe during a lockdown. Tables 9a and 9b attempt to identify how updates to existing security technologies and standards, design of new security tools, and increased resources can help overcome those challenges, thereby improving school safety.

Table 9a: Security Technology Enhancements — Existing Areas

Improving Existing Security Technologies	
• Training/planning ••••••••• (9)	
○ Get teachers, custodians, and principals involved in planning	○ Increased training and awareness programs
○ Training needs to be realistic and relevant	○ Develop policy
○ Make staff play roles and get involved	○ Training in indicators of violence
○ Communicate better information	○ Training by school staff to community
	○ Stop using red exit signs
• Code-conforming locking door hardware — specify requirements ••••••• (7)	
○ Classroom security functioning locking devices	○ Key management/control
○ Exit devices	○ Protocol to keep doors closed
○ Door closures	○ Electronic access control
○ Properly maintained openings	○ Remote locking devices
	○ Key systems (credential)
• Risk management ••••••• (7)	
○ Vast body of knowledge related to security risk management	○ All risks are environmental specific
○ All risk treatments are dependent on thorough risk assessment	○ Thorough assessment of all hazards/threats and existing conditions (systems and programs) to plan, prioritize, and implement most effective mitigation projects, programs, and procedures
○ Requires trained security practitioner to analyze the risks	
• Existing technology ••••••• (7)	
○ Building and fire codes	○ Compliance will provide security
○ Look at the existing code requirements from a security point of view	
• Communications (first responder) ••••• (5)	
○ Use SMS/texts to teachers/professors on security status ••••• (5)	○ Upgrade fire alarm to mass notification system (MNS)
○ Integration of real-time data to first responders for computer-aided dispatch, video, and communications •• (2)	○ Use cameras to feed information to command center to implement messaging updates
○ First responder radio coverage	○ Use closed-circuit television (CCTV) to allow first responders to view entrance on scene
○ Communications from locked areas to first responders	○ Clear public announcement system
• Cease using: •••• (4)	
○ Bars	○ Devices (externally applied) that can be misused or abused or that can restrict egress from the room or access by responders
○ Floor bolts	
○ Closer cuffs	
• ANSI standards exist that are relevant to school security ••• (3)	
○ Workplace violence	○ Risk assessment
○ Physical asset protection	○ Risk management (International Organization for Standardization [ISO] 31000)
○ Organization resilience	
• Mixed messages create confusion	
○ Give staff the resources they need to accomplish the task of security • (1)	
• Base lining: Identify effective and ineffective security methods	
• Exploit students' video gaming/cartoon viewing for training and awareness	
• Stop giving minors, children and the mentally disturbed access to high-powered weapons	

Note: Each dot (•) represents a participant-identified priority that could rectify the potential conflict between operational protocols and recommended actions as well as significantly improve school safety from an assault/attack.

Table 9b: Security Technology Enhancements — Novel Concepts

New Security Development Areas

• Conduct risk assessment based on national guidelines/guidance best practices •••••• (6)
  ○ Allows each school (district) to determine prevalence/possibility of threat and have plans in place that take people, technology, and training into account, that is, a system of systems, not one system
• Digital building models ••••• (5)
  ○ Provide digital plans of buildings to first responders on mobile devices to determine location of problem and to facilitate response
  ○ Perform access/egress scenario planning to simulate situations and select best protection strategies
• Tools to identify the following: ••• (3)
  ○ Actions that might cause harm
  ○ Actions that create additional liability
  ○ Protocols to provide simple instructions/base actions, given that there is no single set of correct actions
  ○ What not to do or the measure of assumed liability
• Effective staff action based on prior training • (1)
• Detection of threat at earliest possible time
• Rapid, meaningful communication to staff
• Behavior computational modeling
• Hardware/ systems
  ○ Auto-darkening windows
  ○ Door locks that are egress friendly
  ○ Continued real-time communication

Note: Each dot (•) represents a participant-identified priority that could rectify the conflict between security design features and recommended actions while improving student/faculty safety from an assault/attack.

2.3.5 Priority Areas

Of the ideas listed in Tables 9a and 9b, the following three were prioritized as the most important for security improvements. Many of the topics were grouped to ensure they were addressed properly. The priority areas are detailed in Figures 8–10.

- **Building and Fire Codes from a Security Vantage Point** (Figure 8): Building and fire codes are usually drafted and implemented with evacuations in mind. These same codes should be reexamined to consider security and to accommodate situations for evacuation and lockdown.
- **Augmented Communications** (Figure 9): Timely communications between all responsible parties ensures that school security and safety are maintained and conflicts are eliminated.
- **Security Risk Management** (Figure 10): The safety of a school building and the premises is not a one-size-fits-all effort; rather, it must be a response that can be dynamic in nature to address all sorts of threats and emergencies.

FIGURE 8: Examine Building and Fire Codes from a Security Vantage Point

Description: The threat environment is changing and evolving. School security must account for ongoing threat assessment. Maintenance and inspection to address access and egress systems are important. Access systems are addressed by the codes, but there is no mandate to use those systems.

Implementation Plan

Limitations to Current Security Offerings	• No security (classroom door locking) code • No budget for maintenance and upgrades • Ineffective maintenance • Decision-making model in schools to address minimum security requirements to threat assessment
Major Tasks	• Propose ingress codes adoption (NFPA/ICC) of minimum school security • Identify language to accommodate occupancy code adjustment for shelter in place • Create guideline document based on best practices in school security
Performance Targets	• Change in code or recognized need • National adoption state by state • Guidance on how to design pre-K security — group not sure what document should deliver that message/guideline
Adoption	• Adequate budget • Establish requirement for adoption (formal)

Other Issues

Stakeholders	• Stakeholders who propose codes • NFPA/ICC • State-recommended best practices • Jurisdiction adoption of code/or guideline
Resources	• State guidelines • U.S. Secret Service guidelines • Inspection criteria for new systems/features (new construction) • Peer-to-peer reviews
Further Concepts	• None provided
Other Public Applications	• None provided

FIGURE 9: Augmented Communications Among All Relevant Parties

Description: Maintain open and transparent discussions with all involved parties. Build relationships with all stakeholders, especially first responders. Ensure that stakeholders who are involved in the security plan are involved in the review of all new and renovated school building designs. Require all school building designs to utilize the strategies laid out in the document *Crime Prevention Through Environmental Design for Schools* (CPTED).

Implementation Plan

Limitations to Current Security Offerings	• Keeping systems current and maintained • Expectation of building use and security impact • Determine security impact when buildings are used for other purposes • Accessibility changes after normal hours of use
Major Tasks	• Establish funding • Determine dedicated personnel (down to three levels) • Ensure buy-in from policy makers • Ensure safety and security staff development • Maintain continuity during administration changes
Performance Targets	• Survey staff, parents, and students (high school and above) for perceived success (establish baseline prior to security implementation)
Adoption	• Complete buy-in of need for security • Private schools less apt to buy in • Needs to be included in planning

Other Issues

Stakeholders	• Stakeholders who propose codes • NFPA/ICC • State-recommended best practices • Jurisdiction adoption of code or guidance • School administration • Teachers • Custodians	• Police service • Fire service • Communications specialists • Fire and security specialists • Parents • Students (high school and above)
Resources	• Communications sources to ensure communications work in all areas of buildings	
Further Concepts	• None provided	
Other Public Applications	• Basic principles apply, but dealing with the public (untrained) will be a different challenge — those in authority must be easily identifiable	

FIGURE 10: Security Risk Management

Description: Risk management allows for a process of identifying gaps in security/safety (rather than simply mandating arms, officers, and equipment) and dynamic decision making based on changing threats. This method approaches active threats from a management point of view.

Implementation Plan

Limitations to Current Security Offerings	• Everyone looking for single solution — does not exist • Physical layout plans • Assess for variety of scenarios — most technologies focus on one scenario • Assume adversary will be resilient
Major Tasks	• Follow basic risk management principles • Gather stakeholders • Make part of job responsibility — integrate into normal functions • Top school leadership/management has to designate as priority • Integrate into extracurricular activities • Anonymous whistle-blower policies
Performance Targets	• Realistic scenario exercise (e.g., involve theater club) • Provide enough resources to do assessment • "Events not happening" is not a valid metric • Varied exercises • "Red teaming" — perform an independent analysis from an adversary vantage point to enhance decision making
Adoption	• Mandated (by some level of authority) • Money (no unfunded mandates)

Other Issues

Stakeholders	• Parents (in identifying issues from school violence point of view) • Teachers (helping to identify issues) • Mental health community • Sports coaches
Resources	• Harmonizing the coexistence of educational standards with security requirements, then humanizing the relationship • Money going toward security comes out of education, which creates issues
Further Concepts	• Risk assessment can address all concerns, not just single active threat events. More can be done by approaching day-to-day safety security issues, not just lockdowns for active shooter events
Other Public Applications	• None provided

3 Security Survey Instrument

The previous sections outlined specific regulatory, operational, and security improvements to augment school safety and security. When all these aspects are considered collectively, it becomes clear that there is an opportunity to design a security survey instrument to identify the parameters (e.g., elements and subjects) that need to be considered when a school system develops an overall security plan for any school/college building. This section provides some preliminary criteria for a checklist or form if organizations decide to develop the security survey. Ideas presented under these high-level categories are not meant to be an exhaustive checklist of mandatory ideas but rather an opportunity to lay out and debate the types of information that should be considered in the design of a relevant security survey. The tables in this section feature workshop findings that have been consolidated to avoid repetition and to identify common themes — the original responses to the security survey are presented in Appendix D.

3.1 Considerations from Existing Codes

As a school security survey or audit form is standardized for implementation, the elements from building, fire, and life safety codes and listed in Table 10 need to be considered:

Table 10: Audit Form Standardization for a Security Survey

Codes
• Include egress and locking requirements in the codes • Outline risk and threat assessments in the current codes and supporting documents • Explore the interface between fire codes and security
Physical Components/Building Construction
• Presence of special locking systems and hardware • Delayed locking systems — need to evaluate code compliance versus security needs • Install new or upgraded communications systems • Consider multipurpose mass notification systems and split internal and external communications systems • Provide pedestrian and vehicular ingress and egress routes • Install fire protection/prevention items and systems (e.g., exit signage, alarm notification, and fire suppression) • Determine lighting and illumination requirements (e.g., internal versus external lighting) • Build and update facilities according to code • Determine external security and response equipment needs • Determine the separations needed in a facility (e.g., types, protective openings, and glazing)

(continues)

Inspection, Testing, and Maintenance
• Evaluate and maintain unobstructed egress routes, including exit doors • Confirm egress points' compliance with codes • Assess access control systems (e.g., access control, delayed egress, and special egress control) for code compliance • Determine points of vulnerability • Test and confirm correct operation of a standard list of items, including mass notification and communications system; emergency power; backup systems (e.g., lights, exits, locking drives, and alarm systems); lifesaving processes and tools (e.g., fire extinguisher, sprinkler system, defibrillators, and first aid supplies); latching of fire-rated doors; all access/egress control systems; lock hardware; special areas (e.g., chemical hood and computer room); heating, ventilation, and air conditioning (HVAC); utilities (e.g., electrical, water, and sewer); and security alarms • Inspect the safety preparedness of auxiliary spaces (e.g., art buildings and school buses) • Inspect utilities' controls and shut-offs to confirm they are properly labeled, tagged, and identified and are easily accessible • Inspect internal environments such as finishes (e.g., lead paint, asbestos), decoration, window coverings, door lights, and personal electrical devices (e.g., power strips, extension cords, and heaters) • Inspect and maintain facility separations
Training
• Conduct and document emergency drills according to state and local laws and regulations, including compliance requirements, frequency, time of day, and participation of all staff and students • Train staff in correct procedures
Procedures During Event
• Provide access to emergency responders and vehicles • Determine egress procedures (e.g., type, arrangement, quantity, control/hardware, maintenance, posted egress plans, illumination, and marking) • Develop emergency plans for all types of hazards • Establish security procedures for normal operation • Record important information, such as demographics, floor plans, and building data • Develop protocols for assisting disabled students (physical, social, and psychological disabilities)

3.2 Safety versus Security Trade-Offs

During the development of a security audit form, a number of qualitative and quantitative trade-offs between school security and life safety (e.g., fire drills versus lockdown drills versus competing hazard drills) should be considered. Table 11 lists some of the most relevant concerns.

Table 11: Considerations in Safety versus Security Trade-Offs

Protocol Adjustments
• Using guidance based on occupancy load to ensure best shelter-in-place outcomes • Allow delayed evacuations when specific protections and actions are required (e.g., sprinklers and trained personnel to identify hazards) • Evacuation with fire alarm or smoke detector triggered: if only one alarm/detector is triggered, allow for a 3-minute delay; if two or more are triggered, perform immediate evacuation • Sprinkler systems are engaged with water flow: perform immediate evacuation • Evacuate versus relocate • Delayed evacuation — pre-signal fire alarm system • Balanced approach needs to be established between security and safety and not a trade-off • Consider age of students

(continues)

Physical Equipment/Building Construction
• Allow two-action classroom door locks • Determine the optimal path for door openings and assess the impact on room security and fire safety • Determine if general trend toward "green building" design and buildings affects school safety • Provide improved communications and notification systems within school settings • Security devices used when building is considered unoccupied • Evaluate delayed egress locks • Fire protection: more complex hardware allows for new functionality, but risks of component/system failure need to be mitigated • Existing versus new construction
Training
• Balancing drill schedules to include all likely hazards • Reduce number of fire drills and add required lockdown drills (e.g., five fire drills and four lockdown drills) • Determine if a multi- or all-hazard approach to emergency drills is better than just armed assailant • Alternate fire drills with other drills (fire drill first) • Flexibility in meeting drill requirements—combined fire and other hazard drills • Consider age of students when determining appropriate fire versus other drills

3.3 Major Tasks

Table 12 identifies a variety of important tasks that should be completed to create a pertinent audit form. The concepts are presented in general categories and in no specific order, and the list is by no means comprehensive.

Table 12: Important Tasks to Develop an Effective Audit Form

Planning
• Evaluate and develop guidelines and multidisciplinary standards • Identify security vulnerability analysis methodology • Perform risk analysis (all schools in community) • Identify, select, and understand stakeholders • Meet with major stakeholders (all inclusive) • Get buy-in or legislative mandate and secure the necessary funding • Coordination and communication • Perform code reviews and analysis • Develop plans and code changes • Create or modify emergency preparedness plans • Meet with facility engineers to align security needs and response actions, taking into account structural impacts; collectively use this knowledge to develop safety standards • Arrive at agreement on where information related to security requirements is stored, who is responsible for information, and with whom information can be shared • Assign duties to personnel • Create inspection checklists and maintain records • Assign code compliance leadership or committee • Establish partnership with first responders

(continues)

Implementation
• Set timelines for implementation • Identify points for beta testing of the audit forms • Develop a checklist/follow proper NFPA standards • Inventory resources available • Plan for relevant portions to be shared with public (consider developing and distributing basic document such as a high-level public summary) • Perform inspections; create inspection and testing schedule for access control systems and other inspections • Develop team to conduct site review to determine security system impact on response methodology
Training
• Training provided to all relevant parties (e.g., bus drivers, teachers, and critical personnel); content includes established protocols and processes • Require practice drills • Regulate inspectors responsible for assessing safety equipment (e.g., fire doors and sprinklers) • Ensure correction of all violations • Create a report archive — inspection, correction • Establish consistency/quality control of inspections and uniformity of process • Review and update processes annually • Provide code training for teachers and staff

3.4 Performance Targets

To evaluate the effectiveness of a security survey, the performance targets listed in Table 13 are necessary.

Table 13: Key Performance Targets

Performance Targets
• Survey students, staff, and other stakeholders • Compliance with guidelines and codes • Training/exercises with evaluation • Integrated emergency plan that ensures life safety with minimal impact to facilities and covers all known and perceived hazards, with documentation/updates, and that has been tested and drilled • Plan for special needs students and staff, substitute teachers, and planners • Evaluation, performance drills (testing), records of training and drills compared to requirements • Standardized terminology accepted by the majority of stakeholders • Compulsory checklists or other documentation maintained current and up to date • Review by safety and code committees • Inspection report with deficiencies, post-incident analysis • Create priority listing of deficiencies and necessary corrections • Quality assurance and quality control • Data analysis to identify common deficiencies and to target training and enforcement actions • Enable adaptability to different needs in the jurisdiction (e.g., type of school, age of building, type of building, and type of hazard) • Consensus/buy-in: adoption of guidelines by states • Resource responsibility

3.5 Adoption

A survey instrument has the potential to help schools maintain life safety while incorporating security methods into their buildings. However, this instrument is of no value unless it is relevant and adopted by school systems. Table 14 identifies some of the key elements that should be considered for the survey to be accepted, implemented, and adopted.

Table 14: Key Elements to Foster Adoption

Survey Adoption Elements
• State and federal funding incentives • Content/information contained in model codes versus supplemental regulations or rules at state/local level • Code or legislative mandate and establishment of a national standard • Dedicated funding to ensure adoption • Enforcement mechanism (e.g., withholding of funding) • Include accountability and performance evaluation of all staff • Ensure that the audit methodology is simple • Secure commitment from superintendent • Educate the public on the importance to ensure buy-in • Offer or provide subject-specific training (e.g., fire/emergency training) via outreach to stakeholders, including parents, media • Education/awareness for school leadership district • Augment the code to ensure it is mandated • Code language will apply to public and private schools • More objective information/study on specifics of problem • Provide effective communication to all stakeholders on the program when revisions or changes are made • Joint training (among all responsible parties) • Ensure the availability of resources • Include all public and private school stakeholders

3.6 Additional Considerations

Other aspects that could be relevant to creating an effective security survey include (1) the need for a delayed response for evacuation when the building fire alarm system is activated and the implications of this delay and (2) the types of existing locking hardware that are code compliant and non–code compliant; these components could be evaluated for their effectiveness in an active threat incident. Considerations for both aspects are listed in Table 15.

Table 15: Additional Considerations for Evacuations and Locking Equipment

Possibility of a Delayed Evacuation after Fire Alarm Activation	
Delayed Evacuation • Could be considered with buildings having fully equipped sprinklers with guidelines and procedures • Acceptable when approved by authority having jurisdiction and written into emergency plans • Delayed evacuation can be relevant, provided a comprehensive package is in place • Needs to be code compliant • Before any procedures are modified, a careful study of pros and cons of changes should be conducted • Some delays are permitted by code now — need better understanding of the effectiveness of delayed exit/delayed response **Other Concerns** • While under lockdown orders, schools await confirming communications; in all other scenarios, evacuate • Complacency can be disadvantageous — incorrect situation awareness or evaluation, leading to a life safety hazard • Use positive alarm sequencing to keep integrity of fire alarm evacuation signal • More complex crisis management plans lead to higher likelihood of confusion during an emergency • Staged/zoned fire alarm may be preferable, but any barriers must be code compliant • Confirm fire threat if manual fire alarm station is activated (hostile actor may be trying to draw students into the open); addressable fire systems can help pinpoint source of alarm-initiating device • Consider/rethink notion that immediate evacuation is always best • Consider shelter-in-place alternative: relocate versus evacuate • Performance is better than training	
Existing Locking Hardware	

Compliant
• Remote electronic hardware
• Single action: cannot use key, tool, special knowledge, or effort
• Doors with free egress and one motion to unlatch (latch at) 34"–48" mounting height
• Locking mechanisms
  ○ Single-action door-lock combination
  ○ Dead bolt
  ○ Single-action lock
  ○ Magnetic locking devices (similar to hotel lock set)
• Interconnected egress sets — one motion to operate and release, no special knowledge or effort
• Locks should have following characteristics: ease of use, does not put teacher in jeopardy, are appropriate
• Can lock securely while maintaining egress
	Non-Compliant
	• Ability to open doors from other side
	• Special knowledge or effort
	• Doors with keys/tools mounted at other than required mounting height
	• Doors requiring more than one operation to unlatch
	• Non-listed/or non-code-compliant door hardware and aftermarket devices
	• Any device requiring special knowledge, effort, or multiple steps to unlock
	• Egress equipment requiring a special action(s)
	• Anything that limits or prohibits egress

3.7 Stakeholders and Roles

Many stakeholders are involved in the development, implementation, and adoption of a security survey. Table 16 lists some of those stakeholders; certain jurisdictions and school systems might require the involvement of additional entities.

Table 16: Important Partners

Stakeholders

• School personnel
  ○ Administrators — school districts officials and the Department of Education (federal and state level)
  ○ Teachers
  ○ Students in high school and above
  ○ School staff (e.g., custodians, teaching assistants, and mental health professionals)
  ○ Parents and related organizations (e.g., Parent-Teacher Organization)
  ○ Security/safety staff
  ○ Special education/access functional needs personnel
• Law enforcement and first responders — police/fire service and EMS
• Systems professions (fire and security)
• Security contractors (proficient in relevant codes)
• Facility engineers
• Government officials, lawmakers, elected officials
• Fire code/building code officials and experts — authorities having jurisdiction
• Product development and testing engineers
• American Institute of Architects (AIA) members

3.8 Existing Resources

Many current resources, such as guidelines, standards, protocols, and technologies, could be useful in the development of a security survey. Several relevant resources are listed in Table 17; no doubt more will need to be considered when an audit form for specific school jurisdictions is being built.

Table 17: Existing Resources Useful to Improving the Survey Instrument

Existing Resources			
Industry Standards/ Codes • NFPA 1 • NFPA 25 • NFPA 72 • NFPA 96 • NFPA *101* • NFPA 730 • NFPA 731 • *NFPA 1600* • International Fire Code (IFC) • Fire life safety (various) • Building codes (various) • American Society for Industrial Security (ASIS) International	**Testing/Listing Agencies** • Underwriters Laboratories (UL) • Intertek Testing Services (ITS) • National Institute of Standards and Technology (NIST)	**Assessment Tools** • Minnesota School Safety Center • Integrated Rapid Visual Screening (IRVS) • Department of Homeland Security (DHS) • SSIC	**Resource Organizations** • NFPA 25 • Readiness and Emergency Management for Schools (REMS) Clearinghouse Technical Assistance Center • National Institute of Building Sciences (NIBS) • ASIS International • Fire marshals: International Fire Marshals Association (IFMA) and National Association of State Fire Marshals (NASFM)
• Utilize best practices and make available to all • Funding: state versus federal • Current evacuation research • Awareness presentations • Security guidelines		• Law enforcement procedures • Manufacturers' information • National models for ICS — emergency planning • FEMA *Comprehensive Preparedness Guide (CPG)* 101[8] • Building and infrastructure publications (from DHS)	

[8]FEMA's *Developing and Maintaining Emergency Operations Plan* accessed March 19, 2015, http://www.fema.gov/media-library-data/20130726-1828-25045-0014/cpg_101_comprehensive_preparedness_guide_developing_and_maintaining_emergency_operations_plans_2010.pdf.

3.9 Notifications

Another important aspect of the survey is the notification of stakeholders in the event of an active threat incident. Table 18 lists some items to be considered in determining the timing and content of important notifications and the direction to give to pertinent parties (e.g., parents, media, and other resources).

Table 18: Developing a Notification Strategy

Timing and Content of Notifications

• Specific to emergency preparedness plan
• Designed case by case, including event type and magnitude
• ICS provides for safe (cold) zones where the PIO and other staff work with parents, media, etc.
• Preplanning conducted by fire service, law enforcement, and the education system should determine appropriate notification channels and parties; should be done prior to any incident
• Identify staging areas and backups
• Unified, unmarked, identifiable staging areas
• Follow emergency management plan and use ICS
• Gather guidance from existing resources:
  ○ Industry standards
  ○ NFPA codes
  ○ Law enforcement procedures
  ○ Manufacturers' information
  ○ UL/fire marshal listings

On-Site Considerations and Directions
• Establish PIO joint communications and messages • PIO develops message — exact same message from all parties (i.e., consistent throughout) • Single notification source (as in Anne Arundel County, MD) to notify all relevant parties • Control media access • Notify the community, including parents, teachers, and students • Have staging area set, ensure protections for students

3.10 Further Concepts

Table 19 contains other relevant issues not included in the previous security survey topic areas.

Table 19: Further Points for Discussion from the Security Survey

Additional Relevant Topics
• Plan and design but make implementation simple • Guidance of multi-jurisdictional interoperability • "Prayer" (listed as one possible action/reaction by individuals) • Improve regulations on classroom door security device usage • Expand code/standard listing into security devices and equipment • Replicate the model already established in the fire community • Determine how to create a flexible plan for incidents that initiate internally • Discuss compromise point on free egress versus security • Examine the issues with biometrics and radio frequency devices for improving security • Consider that some training is only for adults • Catalog the scope change in codes

3.11 Risk Assessment Worksheet

Sections 3.1 through 3.10 provided a general framework to design a security survey instrument, as identified by a variety of stakeholders and affected parties. There is an additional opportunity to design an assessment instrument by focusing on the risks present during an active threat incident. Specific aspects of this risk assessment instrument are provided in Table 20.

Table 20: Risk Assessment Vantage Point from the Security Survey

Specific Risk Considerations	
• Internal and external environmental factors • Resource availability (e.g., funds, staff, and facility limits) • Consider spectrum of risks (both positive and negative)	• Determine the objectives of the organization • Plug into existing philosophy of risk scenarios (e.g., hazards and education)
Safety versus Security Trade-Offs	
• Utilizing technology versus reliance on trained people • Human interface, maintenance needs, training • Limiting access points	• Inanimate (e.g., tornado) versus human/dynamic (e.g., active shooter)
Major Tasks	
• Top-level management buy-in • Assemble team to look at all schools (people) • Identify groups external to school to interface	• Provide risk assessment expert (manage risk) • Do risk assessment (identify risk, analyze, and evaluate) • Set priorities for treating risk
Performance Targets	
• Provide enough resources to do assessment • Base performance metric on risk • Recognize that "nothing happening" is not a valid metric	• Exercise training-adequate performance (vary drills) • Red teaming (i.e., use external people to test system)

(continues)

Adoption	
• Mandated by relevant level of authority	• Money (not public versus private; not economics [schools with/without money])
Auxiliary Aspects	
• Fire alarm system • Only if sprinklered building permits delay in response to fire alarm • Locking hardware	• Compliant: User friendly and could not be used against occupants. Thumb turn versus key lock set (evaluate internal and external threat when choosing lock) • Non-compliant: Key/devices at top of door (evaluate internal and external threat when choosing lock)
Roles and Responsibilities of Stakeholders	
• School administrators • Police, fire, EMS workers • Teaching and facility staff (e.g., maintenance and groundskeepers)	• Unions • Students and parents (e.g., PTA)
Existing Related Resources	
• ISO 31000 • ANSI standards (e.g., workplace violence, security management, and risk management)	• Look at various standards development organizations • Look at liability and seek counsel
Notifications	
• Social media with one consistent message • Prepared messages	• Capacity testing under abnormal conditions
Further Concepts	
• Funding • Gun control	• Strong best practices systems

4 Workshop Summary

Balancing life safety needs and the necessity to keep students and faculty safe from a hostile actor on school and college campuses is a significant undertaking, especially because traditional building safety design features and recommended emergency actions often conflict. The *NFPA School Safety, Codes and Security Workshop*, held December 3–4, 2014, brought together various stakeholders to share current understanding on school safety and security and to begin the dialogue on ways to rectify conflicts based on regulatory, operational, and security technology vantage points. Participants identified the most beneficial ideas raised during discussion and developed those concepts into notional implementation plans. Two high-level themes emerged from the discussions:

- Physical and operational needs should be reviewed and updated while considering life safety from emergencies and active threats.
- Improved communications and messaging are needed between incident commanders and school/university staff during emergency situations.

Participants further identified specific priorities for improving the regulatory, operational, and security aspects of school safety.

When considering security and life safety concurrently, there is an opportunity to develop a baseline security survey instrument that administrators can use to establish or enhance an overall security plan for any school or college building. Workshop participants identified some preliminary criteria for such a security survey instrument. The criteria are not intended to be all-inclusive; instead, they are meant to stimulate discussion and thought about the types of information that should be considered in the design of a security survey instrument. Those criteria can also be modified and tailored for school systems or colleges as needed.

This report summarizes the results of the workshop and provides crucial findings that school systems and colleges can build upon as they develop or evaluate and update their security plans. This report along with additional information on this topic can be found on the NFPA website at http://www.nfpa.org/safety-information/for-consumers/occupancies/school-fires/codes-and-security-workshop.

Completion and issuance of this report do not represent the end of these discussions, nor is it implied that all the issues have been identified and solved. 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 the communication. The realization is that to truly provide a safe and secure school environment, the methods, techniques, operations, and corresponding thought process must all be flexible enough to recognize that some level of change will be necessary.

The information in this report is not intended to be static. Rather, it is intended to be used as a resource for standards development organizations (SDOs); code developers; first responders; members of the architectural, engineering, and security professions; and groups that manage and operate schools systems. Numerous NFPA Technical Committees will be reviewing the report in detail and setting in motion a process to evaluate the requirements of various NFPA codes and standards. The goal of this review is to see how and where the security requirements can blend in better with traditional fire, building, and life safety goals.

Appendix A. Workshop Participants

The following individuals attended the *NFPA School Safety, Codes and Security Workshop* and contributed input that serves as the basis of this report.

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National Fire Protection Association

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Anne Arundel County Public Schools

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Minnesota State Fire Marshal Division

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Builders Hardware Manufacturers Association

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Anne Arundel County Public Schools

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Energetics Incorporated

Appendix B. Related Codes and Documents

The following codes, standards, guides, and other documents listed here relate to the topics discussed during the workshop.

NFPA Codes, Standards, and Guides

NFPA 1, *Fire Code*: Requirements cover the full range of fire and life safety issues from fire protection systems and equipment and occupant safety in new and existing buildings to hazardous materials, flammable and combustible liquids, LP-Gas, and more.
http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=1

NFPA 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*: This standard governs the periodic inspection, testing, and maintenance of water-based fire protection systems, including land-based and marine applications. Requirements are provided for standpipe systems, including hose outlets, fire pumps, sprinklers, fire service piping, and valves, along with system impairment handling and reporting.
http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=25

***NFPA 72, National Fire Alarm and Signaling Code*:** Requirements cover the application, installation, location, performance, inspection, testing, and maintenance of fire alarm systems, supervising station alarm systems, public emergency alarm reporting systems, fire warning equipment and emergency communications systems (ECS), and their components. Provisions are expressed in prescriptive requirements with performance-based design methods and risk analysis requirements provided and essential for the proper design and integration of mass notification systems.
http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=72

NFPA 80, *Standard for Fire Doors and Other Opening Protectives*: General requirements and provisions for the care and maintenance of fire doors and other opening protectives. Opening protectives that are addressed include swinging doors, horizontally sliding doors, vertically sliding fire doors, rolling steel doors, fire shutters, service counter fire doors, hoistway doors for elevators and dumbwaiters, chute doors, access doors, fire windows, glass block assemblies, fire dampers, and fabric fire safety curtains.
http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=80

NFPA 96, *Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations*: Provisions cover the design; installation; operation; and inspection, testing, and maintenance of the full spectrum of cooking equipment, hoods, grease removal devices, exhaust duct systems, fans, fire suppression systems, and clearance to combustibles.
http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=96

NFPA *101, Life Safety Code*: Provisions are included for all types of occupancies, with requirements for egress, features of fire protection, sprinkler systems, alarms, emergency lighting, smoke barriers, and special hazard protection.
http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=101

NFPA 730, *Guide for Premises Security*: Provisions cover security planning, administrative controls, security perimeters, crime prevention through environmental design, security systems, and accessory property. In addition, individual chapters present specific requirements for educational facilities, health care, lodging, multi-dwelling unit buildings, restaurants, shopping centers, retail establishments, office buildings, and industrial facilities.
http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=730

NFPA 731, *Standard for the Installation of Electronic Premises Security Systems*: Provisions define the means of signal initiation, transmission, notification, and annunciation; the levels of performance; and reliability. NFPA 731 also presents information necessary to modify or upgrade an existing system to meet the requirements of a particular application. Chapters cover fundamentals; intrusion detection systems; electronic access control systems; video surveillance systems; holdup, duress, and ambush systems; monitoring stations; testing and inspections; and asset protection systems.
http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=731

***NFPA 1600, Standard on Disaster/Emergency Management and Business Continuity Programs*:** Provisions cover the development, implementation, assessment, and maintenance of programs for prevention, mitigation, preparedness, response, continuity, and recovery.
http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=1600

***NFPA 5000, Building Construction and Safety Code*:** Design criteria regulate and control permitting; design; construction, alteration, and repair; quality of materials; equipment and systems; use and occupancy; demolition; location; and maintenance of all types of buildings and structures. Separate chapters address issues specific to individual occupancy types, structural features, building materials, and building systems. A performance-based option is also included.
http://www.nfpa.org/codes-and-standards/document-information-pages?mode=code&code=5000

Other Relevant Codes and Guides

ISO 31000, *Risk management — Principles and guidelines*: Risks affecting organizations can have consequences in terms of economic performance and professional reputation, as well as environmental, safety, and societal outcomes. Therefore, managing risk effectively helps organizations to perform well in an environment full of uncertainty.
http://www.iso.org/iso/home/standards/iso31000.htm

Comprehensive Preparedness Guide (CPG) 101, *Developing and maintaining emergency Operations Plans*, Version 2: Provides guidelines on developing emergency operations plans (EOP). It promotes a common understanding of the fundamentals of risk-informed planning and decision making to help planners examine a hazard or threat and produce integrated, coordinated, and synchronized plans. The goal of CPG 101 is to make the planning process routine across all phases of emergency management and for all homeland security mission areas.
http://www.fema.gov/media-library-data/20130726-1828-25045-0014/cpg_101_comprehensive_preparedness_guide_developing_and_maintaining_emergency_operations_plans_2010.pdf

BIPS 04, *Integrated Rapid Visual Screening Series (IRVS) for Buildings*: Tool designed to determine initial or relative risk and resilience for buildings based on visual inspection only. *IRVS for Buildings* categorizes 15 building types and addresses 20 hazardous events: internal (intrusion, blast, and chemical, biological, radiological CBR); external blast and external chemical, biological, and radiological releases from 100, 300, and 1,000 feet; earthquakes (ground shaking and ground failure; floods (still water and velocity surge); wind (hurricane, tornado, and other wind events); landslide (rainfall and earthquakes); and fire (resulting from earthquakes, blast, or arson).
http://www.dhs.gov/bips-04-integrated-rapid-visual-screening-series-irvs-buildings

Appendix C. Acronyms and Abbreviations

ADA	Americans with Disabilities Act
AHJ	Authority Having Jurisdiction
AIA	American Institute of Architects
ANSI	American National Standards Institute
ATIS	Alliance for Telecommunications Industry Solutions
BHMA/DHI	Builders Hardware Manufacturers Association/Doors and Hardware Institute
CAD	computer-aided dispatch
CCTV	closed-circuit television
CPG	Comprehensive Preparedness Guide
CPTED	Crime Prevention Through Environmental Design
CRR	Cyber Resilience Review
DHS	U.S. Department of Homeland Security
ECS	Emergency Communications System
EM	emergency management
EMS	emergency medical services
EOP	emergency operations plan
FBI	Federal Bureau of Investigation
FCAC	Fire Code Advisory Council
FM	fire marshal
HS	high school
HSEEP	Homeland Security Exercise and Evaluation Program
HVAC	heating, ventilation, and air conditioning
IACP	International Association of Chiefs of Police
IBC	International Building Code
ICC	International Code Council
ICS	Incident Command System
IFC	International Fire Code
IFMA	International Fire Marshals Association
IRVS	Integrated Rapid Visual Screening
ISO	International Organization for Standardization
ITS	Intertek Testing Services
MNS	Mass Notification System
NFPA	National Fire Protection Association
NASFM	National Association of State Fire Marshals
NASRO	National Association of School Resource Officers
NASSLEO	National Association of School Safety and Law Enforcement Officers
NIBS	National Institute of Building Sciences

NIMS	National Incident Management System
PIO	public information officer
PTA	Parent-Teacher Association
PTO	parent-teacher organization
REMS	Readiness and Emergency Management for Schools
RFD	radio-frequency device
SMS	short message service
SVA	security vulnerability analysis
TIA	tentative interim amendment
UL	Underwriters Laboratories

Appendix D. Security Survey Worksheets

Appendix D displays all 11 Security Survey worksheets completed by the small groups during the workshop. Each group worked independently to identify the different aspects that should be considered for the development of a comprehensive life-safety security plan for a facility's building(s). All original input is included in the following pages for the reader's reference. One group evaluated the development of a building security plan from a risk assessment vantage point (Sheet D-10, which is highlighted in red).

Topic Area: SECURITY SURVEY INSTRUMENT THAT INTEGRATES THE FIRE SAFETY ISSUES

Brief Description: If a school security survey or audit form is standardized, what are the elements from building, fire and life safety codes that need to be considered?

- Presence of special locking systems and hardware
- Split internal and external communication systems
- Lighting and illumination (internal versus external)
- Points of vulnerability
- Fire protection factors and systems
- Emergency planning and exit drills
- Emergency plans
- Inspection, Testing and Maintenance

Safety vs. security trade-offs: Discuss the qualitative and quantitative trade-offs to improve school security while ensuring life safety (better school security without sacrificing fire safety - fire drills vs. lockdown drills vs. competing hazard drills). Please be specific and provide numerical estimates as possible.

- Meet requirements: flexibility, combined fire and other hazard drill
- Fire Protection: more complex hardware, but mitigate risks of features
- Evacuate vs. relocate
- Existing vs. new construction
- Consider school age of children

Implementation Plan

Major Tasks: Please list the tasks that need to be followed in order to realize the described security audit form discussed above, include 3-5 major tasks

- Guidelines
- Security Vulnerability Analysis methodology
- Vulnerability assessment methodology
- Multi-disciplinary standards
- Understanding of stakeholders
- Funding
- Implementation timeline
- Beta test

Performance Targets: Identify 1-5 (quantitative) performance targets that define a successful outcome (what does success look like?)

- Consensus/buy-in: adoption of guidelines by states
- Compliance with guidelines and codes
- Resource responsibility

Adoption: What is needed to secure adoption of this concept by educational systems? Difference between public and private schools?

- State and Federal funding incentives
- Codes vs. Regulations

Auxiliary aspects of the security survey :

Fire Alarm System: Should there be a delayed response for evacuation when the building fire alarm system is activated? What are the implications of that?

- Consider shelter in place alternative: relocate vs evacuate
- Performance is better than training

Locking hardware: Describe the current lock sets that comply with the codes. Conversely, what does the currently available locking hardware that is not code compliant look like?

- **Compliant:** Remote electronic hardware
- **Non-Compliant:** Open from other side

OTHER ISSUES

Roles and Responsibilities of Stakeholders: Identify the most appropriate/relevant parties that need to be involved to make this development possible

- American Institute of Architects (AIA)
- School districts
- Fine code officials: first responders, Authorities Having Jurisdictions
- Police and first responders

Existing Related Resources: Please list any guidelines, standards, protocols, technologies, or other resources that already exist and could possibly be beneficial to improving the survey instrument

- Funding: state vs. federal
- Code adoption
- Awareness, presentations

Notifications: In designing the survey instrument - who do you tell and when do you tell them about the event? Where do you direct parents, news media & support resources – establish a staging/marshaling area?

- Everyone (e.g., stakeholders from the beginning)
- Exact same message (e.g., consistent)

Further Concepts: Are there relevant issues that should be included not already covered in this brainstorming session?

- Scope change in codes

Topic Area: SECURITY SURVEY INSTRUMENT THAT INTEGRATES THE FIRE SAFETY ISSUES

Brief Description: If a school security survey or audit form is standardized, what are the elements from building, fire and life safety codes that need to be considered?

- Demographics
- Floor plan and building data
- Ingress and egress routes
- Established security procedures and systems (e.g., locking)
- Fire protection and life safety systems

Safety vs. security trade-offs: Discuss the qualitative and quantitative trade-offs to improve school security while ensuring life safety (better school security without sacrificing fire safety - fire drills vs. lockdown drills vs. competing hazard drills). Please be specific and provide numerical estimates as possible.

- One month fire drills then alternate to other drills. So ~4 fire, 4 "other," including lockdown
- More: fire first, w/in 10 days of school starting, then lockdown early

Implementation Plan

Major Tasks: Please list the tasks that need to be followed in order to realize the described security audit form discussed above, include 3-5 major tasks

- Identify and select stakeholders
- Get buy-in or legislative mandate
- Set timelines for implementation
- Coordination and communication

Performance Targets: Identify 1-5 (quantitative) performance targets that define a successful outcome (what does success look like?)

- You have a plan, it's been tested and drilled
- Reports and post-incident analysis

Adoption: What is needed to secure adoption of this concept by educational systems? Difference between public and private schools?

- Code or legislative mandate
- Funding
- Enforcement mechanism (withhold funding)

Auxiliary aspects of the security survey :

Fire Alarm System: Should there be a delayed response for evacuation when the building fire alarm system is activated? What are the implications of that?

- Same delays are permitted by code now
- The shooter/pull issue is open
- Addressable fire systems. We think evacuation is best

Locking hardware: Describe the current lock sets that comply with the codes. Conversely, what does the currently available locking hardware that is not code compliant look like?

- **Compliant:** Single action noted, special knowledge or effort
- **Non-compliant:** we brought them!

OTHER ISSUES

Roles and Responsibilities of Stakeholders: Identify the most appropriate/relevant parties that need to be involved to make this development possible

- Fire/EMS
- Police
- School (including mental health)
- Later:
  - School board/government (help . . . not hurt)
  - Parents

Existing Related Resources: Please list any guidelines, standards, protocols, technologies, or other resources that already exist and could possibly be beneficial to improving the survey instrument

- Review existing codes. Some of this is already included (lock down approval)

Notifications: In designing the survey instrument - who do you tell and when do you tell them about the event? Where do you direct parents, news media & support resources – establish a staging/marshaling area?

- Needs to be in message

Further Concepts: Are there relevant issues that should be included not already covered in this brainstorming session?

- Biometrics/RFD is good, but has issues
- Training idea that some has to be "adults only"

Topic Area: SECURITY SURVEY INSTRUMENT THAT INTEGRATES THE FIRE SAFETY ISSUES

Brief Description: If a school security survey or audit form is standardized, what are the elements from building, fire and life safety codes that need to be considered?

- Egress - types, arrangement, quantity, control/hardware, maintenance, posted egress plans, illumination and marking
- Fire Protection - maintenance and inspection, extent of coverage - fire alarm system, fire suppression, special - hoods, computer room
- Separations - type, opening protective and penetrations, glazing, maintenance and inspection
- Drills - compliance, frequency, time of day, participation of all staff and students
- Infrastructure - utilities, HVAC, electrical, plumbing, personal electrical devices (power strips, extension cords, heaters)
- Internal Environment - finishes (lead paint, asbestos), decorations, window coverings including door lite

Safety vs. security trade-offs: Discuss the qualitative and quantitative trade-offs to improve school security while ensuring life safety (better school security without sacrificing fire safety - fire drills vs. lock down drills vs. competing hazard drills). Please be specific and provide numerical estimates as possible.

- Security devices used when building is considered unoccupied
- Delayed egress locks
- Delayed evacuation - pre-signal fire alarm system

Implementation Plan

Major Tasks: Please list the tasks that need to be followed in order to realize the described security audit form discussed above, include 3-5 major tasks

- Regulate inspectors (fire doors, sprinklers)
- Report archive - inspection, correction
- Ensure correction of all violations

Performance Targets: Identify 1-5 (quantitative) performance targets that define a successful outcome (what does success look like?)

- Public acceptance
- Is it adaptable to different needs in the jurisdiction (type of school, age of building, type of building, type of hazard)?

Adoption: What is needed to secure adoption of this concept by educational systems? Difference between public and private schools?

- Keep it simple
- Commitment from superintendent

Auxiliary aspects of the security survey:
Fire Alarm System: Should there be a delayed response for evacuation when the building fire alarm system is activated? What are the implications?

- Not sold on delayed exit/delayed response in general yet
- Staged/zoned fire alarm may be preferable but barriers must be code-compliant

Locking hardware: Describe the current lock sets that comply with the codes. Conversely, what does the currently available locking hardware that is not code compliant look like?

- **Compliant:** free egress, & 1 motion to unlatch, 34-48" mounting height
- **Non-compliant:** special knowledge or effort, keys/tools, mounted outside of required mounting height, more than 1 operation to unlatch

OTHER ISSUES

Roles and Responsibilities of Stakeholders: Identify the most appropriate/relevant parties that need to be involved to make this development possible

- Law Enforcement
- Fire Department
- School System - staff, administration, students, parents, custodians, PTO
- Product development and testing

Existing Related Resources: Please list any guidelines, standards, protocols, technologies, or other resources that already exist and could possibly be beneficial to improving the survey instrument

- Existing Codes-NFPA 1,*101*, 72, 96, 25, 13, etc.
- Industry standards
- Law enforcement procedures
- Manufacturers' information
- UL/ITS/FM listings

Notifications: In designing the survey instrument - who do you tell and when do you tell them about the event? Where do you direct parents, news media & support resources – establish a staging/marshaling area?

- Existing Codes - NFPA 1, *101*, 72, 96, 25, 13, etc.
- Industry standards
- Law enforcement procedures & UL/ITS/FM listings
- Manufacturers' information

Further Concepts: Are there relevant issues that should be included not already covered in this brainstorming session?

- How to plan for incidents that initiate internally - need flexible plan
- Whether to compromise on free egress vs. security

Topic Area: SECURITY SURVEY INSTRUMENT THAT INTEGRATES THE FIRE SAFETY ISSUES

Brief Description: If a school security survey or audit form is standardized, what are the elements from building, fire and life safety codes that need to be considered?

- Evaluation and maintenance of Egress
- Integrated evaluation of life safety earthquake Fire alarm, sprinkler system, public address and security alarms
- Test of mass communication systems/ notification
- Testing of emergency power and backup systems (lights, exits, locking drives, alarm systems)
- Maintained and functioning as designed
- Utilities controls and shut-offs – labeled, tagged, and properly identified, accessible

Safety vs. security trade-offs: Discuss the qualitative and quantitative trade-offs to improve school security while ensuring life safety (better school security without sacrificing fire safety - fire drills vs. lockdown drills vs. competing hazard drills). Please be specific and provide numerical estimates as possible.

- Balanced approach needs to be established and not a tradeoff
- Multi/all hazard approach to emergency drills not just armed assailant

Implementation Plan

Major Tasks: Please list the tasks that need to be followed in order to realize the described security audit form discussed above, include 3-5 major tasks

- Development of a checklist/follow proper NFPA standards
- Training/outreach training
- Constancy/quality control of inspections and uniformity of process
- Processes must be reviewed and updated annually, etc.

Performance Targets: Identify 1-5 (quantitative) performance targets that define a successful outcome (what does success look like?)

- Quality assurance and Quality control
- Use data analysis to identify common deficiencies and then target training and enforcement actions

Adoption: What is needed to secure adoption of this concept by educational systems? Difference between public and private schools?

- Educate why this important/have them buy-in
- No difference
- Offer or provide subject specific training Fire/Emergency training via outreach

Auxiliary aspects of the security survey:

Fire Alarm System: Should there be a delayed response for evacuation when the building fire alarm system is activated? What are the implications of that?

- Yes, however must have a comprehensive package in place
- Code compliant

Locking hardware: Describe the current lock sets that comply with the codes. Conversely, what does the currently available locking hardware that is not code compliant look like?

- **Compliant**: Single action door lock combination dead bolt single action lock magnetic locking devices
- **Non-compliant**: Non listed/or code compliant door hardware and aftermarket devices

OTHER ISSUES

Roles and Responsibilities of Stakeholders: Identify the most appropriate/relevant parties that need to be involved to make this development possible

- Education community,
- Fire/EMS
- Law enforcement
- Government/lawmakers
- Code and building development experts
- Product development and testing

Existing Related Resources: Please list any guidelines, standards, protocols, technologies, or other resources that already exist and could possibly be beneficial to improving the survey instrument

- Codes and standards
- Testing and listing agencies
- National models for ICS – emergency planning
- Utilize and identify the best practices and make available

Notifications: In designing the survey instrument - who do you tell and when do you tell them about the event? Where do you direct parents, news media & support resources – establish a staging/marshaling area?

- Depends on the event and magnitude
- Preplanning conducted by fire/law enforcement/education should determine. Done prior to any incident

Further Concepts: Are there relevant issues that should be included not already covered in this brainstorming session?

- Expand code standard listing into security devices and equipment
- Replicate the model already established in the fire community

Topic Area: SECURITY SURVEY INSTRUMENT THAT INTEGRATES THE FIRE SAFETY ISSUES	
Brief Description: If a school security survey or audit form is standardized, what are the elements from building, fire and life safety codes that need to be considered? • Fire codes, security interface • Facility-external security/response equipment • Consider multi-purpose mass notification systems	**Safety vs. security trade-offs:** Discuss the qualitative and quantitative trade-offs to improve school security while ensuring life safety (better school security without sacrificing fire safety - fire drills vs. lockdown drills vs. competing hazard drills). Please be specific and provide numerical estimates as possible. • Fire alarm pulls – 2 or more – immediate • Smoke detectors – 3 min delay or if 2 activated – immediate • Sprinkler – water flow - immediate

IImplementation Plan		
Major Tasks: Please list the tasks that need to be followed in order to realize the described security audit form discussed above, include 3-5 major tasks • Partnership with fast responders • Develop team to conduct site review to determine security system impact on response methodology • Meet with facility engineers to align security and response with structural impacts and develop safety	**Performance Targets:** Identify 1-5 (quantitative) performance targets that define a successful outcome (what does success look like?) • Integrated emergency plan that projects life safety with minimal impact to facilities **Adoption:** What is needed to secure adoption of this concept by educational systems? Difference between public and private schools? • Education/awareness for school leadership district	Auxiliary aspects of the security survey : **Fire Alarm System:** Should there be a delayed response for evacuation when the building fire alarm system is activated? What are the implications of that? **Locking hardware:** Describe the current lock sets that comply with the codes. Conversely, what does the currently available locking hardware that is not code compliant look like? • Compliant: • Non-compliant: ?

OTHER ISSUES		
Roles and Responsibilities of Stakeholders: Identify the most appropriate/relevant parties that need to be involved to make this development possible • Security/safety staff • First responders • School/district leadership • Facility engineers • Special Ed/access functional needs	**Existing Related Resources:** Please list any guidelines, standards, protocols, technologies, or other resources that already exist and could possibly be beneficial to improving the survey instrument • ASIS • CPE-101 (developing emergency plans)	**Notifications:** In designing the survey instrument - who do you tell and when do you tell them about the event? Where do you direct parents, news media & support resources – establish a staging/marshaling area? • PIOs develop messages • Unified unmarked IDs staging areas **Further Concepts:** Are there relevant issues that should be included not already covered in this brainstorming session?

Topic Area: SECURITY SURVEY INSTRUMENT THAT INTEGRATES THE FIRE SAFETY ISSUES

Brief Description: If a school security survey or audit form is standardized, what are the elements from building, fire and life safety codes that need to be considered?

- Assessment of code compliance for all access control systems (access control, delayed egress, special egress control, etc.
- Maintenance and testing (schedule) of all access/egress control systems
- Emergency responder access
- Means of egress maintained and unobstructed
- Fire rated doors closed/latched

Safety vs. security trade-offs: Discuss the qualitative and quantitative trade-offs to improve school security while ensuring life safety (better school security without sacrificing fire safety - fire drills vs. lockdown drills vs. competing hazard drills). Please be specific and provide numerical estimates as possible.

- Reduce fire drills and add lockdown (5 Fire Drills and 4 Lockdown)
- Improved communications and notification systems

Implementation Plan

Major Tasks: Please list the tasks that need to be followed in order to realize the described security audit form discussed above, include 3-5 major tasks

- Create inspection and testing schedule for access control systems and other inspections
- Assign duties to personnel
- Create inspection checklists and maintain records
- Code training for teachers and staff
- Assign code compliance leadership or committee

Performance Targets: Identify 1-5 (quantitative) performance targets that define a successful outcome (what does success look like?)

- Completing checklists
- Recording drill logs
- Safety/code committees review
- Create priority listing of deficiencies and necessary corrections

Adoption: What is needed to secure adoption of this concept by educational systems? Difference between public and private schools?

- Add to code (mandated)
- Code language will apply to both (all Educational Occupancies)

Auxiliary aspects of the security survey :

Fire Alarm System: Should there be a delayed response for evacuation when the building fire alarm system is activated? What are the implications of that?

- Use positive alarm sequencing to keep integrity of fire alarm evaluation signal
- More complex the plan = more confusion

Locking hardware: Describe the current lock sets that comply with the codes. Conversely, what does the currently available locking hardware that is not code compliant look like?

- Compliant: Interconnected egress sets – one motion to operate and release – no special knowledge or effort. Any device req. special knowledge, effort, or multiple steps
- Non-compliant:

OTHER ISSUES

Roles and Responsibilities of Stakeholders: Identify the most appropriate/relevant parties that need to be involved to make this development possible

- Fire code officials/building code officials
- School administration
- Law enforcement
- Security contractors (must know code)

Existing Related Resources: Please list any guidelines, standards, protocols, technologies, or other resources that already exist and could possibly be beneficial to improving the survey instrument

- MN school safety center school security assessment checklist
- IRVS assessment
- Building and Infrastructure Publications (DHS)

Notifications: In designing the survey instrument - who do you tell and when do you tell them about the event? Where do you direct parents, news media & support resources – establish a staging/marshaling area?

- Must be designed case by case
- Follow EM plan and use Incident Command System (ICS)

Further Concepts: Are there relevant issues that should be included not already covered in this brainstorming session?

- Discussion re: regulations for use of classroom door security devices

Topic Area: SECURITY SURVEY INSTRUMENT THAT INTEGRATES THE FIRE SAFETY ISSUES

Brief Description: If a school security survey or audit form is standardized, what are the elements from building, fire and life safety codes that need to be considered?

- Access control and lock hardcore be tested, and confirmed to be working order and in compliance
- Ensure exist doors are not blocked/locked
- Drills are conducted and documented according to state and local laws/regulations
- Check lifesaving processes and tools such as fire extinguisher, defibrillators, and first aid supplies
- Check other places (art buildings) and vehicles (school buses) to ensure they have adequate safety tools
- Protocols for acting with disabled students (physical, social, psychological) are in place

Safety vs. security trade-offs: Discuss the qualitative and quantitative trade-offs to improve school security while ensuring life safety (better school security without sacrificing fire safety - fire drills vs. lockdown drills vs. competing hazard drills). Please be specific and provide numerical estimates as possible.

- Way which a door is to open: in or out. Is it good for security, but not fire safety
- Does movement toward "green building" impact school safety?

Implementation Plan

Major Tasks: Please list the tasks that need to be followed in order to realize the described security audit form discussed above, include 3-5 major tasks

- Training: everyone (bus drivers, teachers) knows established protocols and processes
- Agreement is made on where information related to security requirements, who is responsible for information, and to whom information can be shared
- Plan – relevant portions – to be shared with public (consider developing – distributing basic document/(summary)

Performance Targets: Identify 1-5 (quantitative) performance targets that define a successful outcome (what does success look like?)

- Standard terminology re: school safety, e.g., lock down is accepted by __% of schedule

Adoption: What is needed to secure adoption of this concept by educational systems? Difference between public and private schools?

- Additional funds
- More information/study on specifics of problem: just the facts

Auxiliary aspects of the security survey :

Fire Alarm System: Should there be a delayed response for evacuation when the building fire alarm system is activated? What are the implications of that?

- Before procedure is changed – a careful study of pros/cons of such change should be conducted

Locking hardware: Describe the current lock sets that comply with the codes. Conversely, what does the currently available locking hardware that is not code compliant look like?

- Compliant: Because of lack of knowledge of state codes cannot answer question. However, we feel locks should have following characteristics: Case of use, does not put teacher in jeopardy, are appropriate
- Non-compliant:

OTHER ISSUES

Roles and Responsibilities of Stakeholders: Identify the most appropriate/relevant parties that need to be involved to make this development possible

- Schools: facility, staff, students, parents
- Law enforcement: Sheriff, local police, SRO
- Mental Health
- Health

Existing Related Resources: Please list any guidelines, standards, protocols, technologies, or other resources that already exist and could possibly be beneficial to improving the survey instrument

- REMS Clearinghouse/T.A. Center, funded by Dept. Ed. Has loads of resources including T.A. Training, best practices on variety of school safety
- NIBS
- American Society of Industrial Security
- High Education Center
- Building Clearinghouse (Dept. of Ed)

Notifications: In designing the survey instrument - who do you tell and when do you tell them about the event? Where do you direct parents, news media & support resources – establish a staging/marshaling area?

- Notify the community including parents, teachers and students.
- Have staging area set" ensure are provides protections for kids

Further Concepts: Are there relevant issues that should be included not already covered in this brainstorming session?

Topic Area: SECURITY SURVEY INSTRUMENT THAT INTEGRATES THE FIRE SAFETY ISSUES

Brief Description: If a school security survey or audit form is standardized, what are the elements from building, fire and life safety codes that need to be considered?

- Risk and threat assessments outline in the current codes and supporting documents
- Egress/locking requirements in the codes
- Training
- Fire alarm notification systems and evacuation plans
- All other fire prevention requirements (clear stairwells, exit signage, etc.)

Safety vs. security trade-offs: Discuss the qualitative and quantitative trade-offs to improve school security while ensuring life safety (better school security without sacrificing fire safety - fire drills vs. lockdown drills vs. competing hazard drills). Please be specific and provide numerical estimates as possible.

- Allow two-action classroom door locks
- Allow delayed evacuations when specific protections and actions are required (sprinklers, trained personnel to identify hazards, etc.)

Implementation Plan

Major Tasks: Please list the tasks that need to be followed in order to realize the described security audit form discussed above, include 3-5 major tasks

- Development of plans and code changes
- Training of critical personnel
- Required practice drills

Performance Targets: Identify 1-5 (quantitative) performance targets that define a successful outcome (what does success look like?)

- Evaluation, performance drills (testing)
- Survey students, staff and other stakeholders

Adoption: What is needed to secure adoption of this concept by educational systems? Difference between public and private schools?

- Communication
- Joint Training

Auxiliary aspects of the security survey:

Fire Alarm System: Should there be a delayed response for evacuation when the building fire alarm system is activated? What are the implications of that?

- Complacency
- Incorrect evaluation resulting in a life hazard

Locking hardware: Describe the current lock sets that comply with the codes. Conversely, what does the currently available locking hardware that is not code compliant look like?

- Compliant:
- Non-compliant: Numerous, such as those requiring a special action(s)

OTHER ISSUES

Roles and Responsibilities of Stakeholders: Identify the most appropriate/relevant parties that need to be involved to make this development possible

- Fire service
- Teachers and students
- Law enforcement
- Administrators
- Department of Education

Existing Related Resources: Please list any guidelines, standards, protocols, technologies, or other resources that already exist and could possibly be beneficial to improving the survey instrument

- DHS assessment tool
- *NFPA 1600*
- CRR Standards currently proposed

Notifications: In designing the survey instrument - who do you tell and when do you tell them about the event? Where do you direct parents, news media & support resources – establish a staging/marshaling area?

- The ICS provides for safe (cold) zones where the PIO and other staff work with parents, media, etc.

Further Concepts: Are there relevant issues that should be included not already covered in this brainstorming session?

Topic Area: RISK ASSESSMENT INSTRUMENT THAT INTEGRATES THE FIRE SAFETY ISSUES

Brief Description: If a school security survey or audit form is standardized, what are the elements from building, fire and life safety codes that need to be considered?

- Environmental factors (internal and external
- Resource availability (money and people, facility restrictions)
- Consider spectrum of risks (positive and negative)
- What are objectives of organization
- Plug into existing philosophy of risk/scenarios (hazards/education)

Safety vs. security trade-offs: Discuss the qualitative and quantitative trade-offs to improve school security while ensuring life safety (better school security without sacrificing fire safety - fire drills vs. lockdown drills vs. competing hazard drills). Please be specific and provide numerical estimates as possible.

- Technology versus people
- Human interface/maintenance needs/training
- Limiting access points
- Inanimate (e.g., tornado) vs. human/dynamic (e.g., active shooter)

Implementation Plan

Major Tasks: Please list the tasks that need to be followed in order to realize the described security audit form discussed above, include 3-5 major tasks

- Top level management buy-in
- Assemble team to look at all schools (people)
- Identify groups external to school to interface
- Provide risk assessment expert (manage risk)
- Do a risk assessment (identify risk, analyze and evaluate)
- Setting priorities for treating risk

Performance Targets: Identify 1-5 (quantitative) performance targets that define a successful outcome (what does success look like?)

- Provide enough resources to do assessment
- Base performance metric on risk
- Recognize that nothing happening is not a valid metric
- Exercise training – satisfactory performance (vary the exercises)
- Red teaming (using external people to test system)

Adoption: What is needed to secure adoption of this concept by educational systems? Difference between public and private schools?

- Mandated (by same level of authority)
- Money (not public vs. private/ [schools with/without money])

Auxiliary aspects of the security survey :

Fire Alarm System: Should there be a delayed response for evacuation when the building fire alarm system is activated? What are the implications of that?

- Only if sprinkler building permits delay response

Locking hardware: Describe the current lock sets that comply with the codes. Conversely, what does the currently available locking hardware that is not code compliant look like?

- Compliant: User friendly and could not be used against us. Thumb turn versus key lock set (evaluate internal and external threat when choosing lock)
- Non-compliant: Key or devices at top of door (evaluate internal & external threat when choosing lock)

OTHER ISSUES

Roles and Responsibilities of Stakeholders: Identify the most appropriate/relevant parties that need to be involved to make this development possible

- Everyone
- Administrators
- Police/fire/EMS
- Teaching and facility staff (maintenance and ground)
- Unions
- Students
- Parents (PTA)

Existing Related Resources: Please list any guidelines, standards, protocols, technologies, or other resources that already exist and could possibly be beneficial to improving the survey instrument

- ISO 31000
- ANSI standards (e.g., workplace violence, security management, risk management)
- Look at various standard development organizations
- Look at liability – seek counsel

Notifications: In designing the survey instrument - who do you tell and when do you tell them about the event? Where do you direct parents, news media & support resources – establish a staging/marshaling area?

- Social media with one consistent message
- Prepared messages
- Capacity testing under abnormal conditions

Further Concepts: Are there relevant issues that should be included not already covered in this brainstorming session?

- Funding
- Gun control
- Strong best practices systems

Topic Area: SECURITY SURVEY INSTRUMENT THAT INTEGRATES THE FIRE SAFETY ISSUES

Brief Description: If a school security survey or audit form is standardized, what are the elements from building, fire and life safety codes that need to be considered?

- Building construction to codes
- Emergency vehicle access
- Egress point(s) compliance to codes
- Fire protection suppression systems
- Communications and alarming
- All hazard emergency preparedness planning

Safety vs. security trade-offs: Discuss the qualitative and quantitative trade-offs to improve school security while ensuring life safety (better school security without sacrificing fire safety - fire drills vs. lockdown drills vs. competing hazard drills). Please be specific and provide numerical estimates as possible.

- Balancing drill schedules to include all likely hazards
- Using guidance at against occupancy load to ensure best shelter-in-place outcome

Implementation Plan

Major Tasks: Please list the tasks that need to be followed in order to realize the described security audit form discussed above, include 3-5 major tasks

- Inspections
- Emergency preparedness plans
- Training development and execution
- Stakeholder meetings
- Code reviews and analysis

Performance Targets: Identify 1-5 (quantitative) performance targets that define a successful outcome (what does success look like?)

- Inspection report with deficiencies
- Records of training and drills compared to requirements
- Plans that cover all known and perceived hazards

Adoption: What is needed to secure adoption of this concept by educational systems? Difference between public and private schools?

- Buy-in and education
- Legislation and national standard
- Available resources

Auxiliary aspects of the security survey :

Fire Alarm System: Should there be a delayed response for evacuation when the building fire alarm system is activated? What are the implications of that?

- Maybe if fully sprinkler equipped buildings with guidelines and procedures
- Agreement by AHJ and written into emergency plan

Locking hardware: Describe the current lock sets that comply with the codes. Conversely, what does the currently available locking hardware that is not code compliant look like?

- Compliant: Can lock secure while maintaining egress
- Non-compliant: Limits or prohibits egress

OTHER ISSUES

Roles and Responsibilities of Stakeholders: Identify the most appropriate/relevant parties that need to be involved to make this development possible

- Public safety officials
- School officials
- Parents
- Elected officials

Existing Related Resources: Please list any guidelines, standards, protocols, technologies, or other resources that already exist and could possibly be beneficial to improving the survey instrument

- Fire life safety codes
- Building codes
- Security guidelines
- Best practices

Notifications: In designing the survey instrument - who do you tell and when do you tell them about the event? Where do you direct parents, news media & support resources – establish a staging/marshaling area?

- Specific to emergency preparedness plan
- Establish PIO - Public Information Officer/joint communications and messages
- Identify staging areas and backups

Further Concepts: Are there relevant issues that should be included not already covered in this brainstorming session?

- Guidance of multi-jurisdictional interoperability
- "Prayer"

Topic Area: SECURITY SURVEY INSTRUMENT THAT INTEGRATES THE FIRE SAFETY ISSUES

Brief Description: If a school security survey or audit form is standardized, what are the elements from building, fire and life safety codes that need to be considered?

- Means of egress (pedestrian and vehicular)
- Communications systems – installation, upgrade, maintenance
- Americans with Disability Act issues
- Locking systems – delayed locks (Code compliance vs. security needs)

Safety vs. security trade-offs: Discuss the qualitative and quantitative trade-offs to improve school security while ensuring life safety (better school security without sacrificing fire safety - fire drills vs. lockdown drills vs. competing hazard drills). Please be specific and provide numerical estimates as possible.

Implementation Plan

Major Tasks: Please list the tasks that need to be followed in order to realize the described security audit form discussed above, include 3-5 major tasks

- Meet with major stakeholders (all inclusive)
- Risk analysis (schools – all in community)
- Inventory resources available

Performance Targets: Identify 1-5 (quantitative) performance targets that define a successful outcome (what does success look like?)

- Regular (min. 2)
- Training/exercises with evaluation
- Documented/updated plan
- Plan for special needs
- Plan for substitute teachers/planner

Adoption: What is needed to secure adoption of this concept by educational systems? Difference between public and private schools?

- Include accountability – performance evaluation of all staff
- Include all public and private school stakeholders

Auxiliary aspects of the security survey :

Fire Alarm System: Should there be a delayed response for evacuation when the building fire alarm system is activated? What are the implications of that?

- During lock down await confirming communications
- All other scenarios evacuate

Locking hardware: Describe the current lock sets that comply with the codes. Conversely, what does the currently available locking hardware that is not code compliant look like?

- Compliant
- Non-compliant

OTHER ISSUES

Roles and Responsibilities of Stakeholders: Identify the most appropriate/relevant parties that need to be involved to make this development possible

- Administrators
- Teachers
- Custodians
- Police/security
- Mental health professionals
- Fire/emergency management
- Systems professions (fire and security)
- Parents and Students (high school and above)

Existing Related Resources: Please list any guidelines, standards, protocols, technologies, or other resources that already exist and could possibly be beneficial to improving the survey instrument

- IFC
- NFPA 730, *NFPA 72*
- Current evacuation research

Notifications: In designing the survey instrument - who do you tell and when do you tell them about the event? Where do you direct parents, news media & support resources – establish a staging/marshaling area?

- Single notification source (like Arundel) notify all – control media access

Further Concepts: Are there relevant issues that should be included not already covered in this brainstorming session?

- Plan, design, simplicity

Appendix E. NFPA Board Chairman Ernest Grants Opening Remarks

School Safety, Codes and Security Workshop

Good morning. I'm Ernest Grant, from the North Carolina Jaycee Burn Center in Chapel Hill and Chair of the NFPA Board of Directors. On behalf of NFPA, including President Jim Pauley, I welcome you to the *School Safety, Codes and Security Workshop*.

Since safety is at the forefront of why we are here, it is customary for all NFPA events to start with a word about our safety while assembled. The fire alarm system in this building is a horn accompanied by flashing strobe lights. If the fire alarm system is activated, please proceed in an orderly fashion to the nearest exit.

Thank you all for taking time to attend the workshop. No one is here by accident; no one came simply because "*this might be an interesting topic*"; and no one is here who doesn't have an opinion or view on the topic of school security. In fact, each of us in attendance has a perspective, opinion, view, thought, role, or idea to contribute to this workshop and the actions that follow. The makeup of the organizations and individuals invited to this workshop is meant to bring the stakeholders to one place, at one time, to explore the challenges we all face when dealing with a hostile threat on school grounds.

In some of the background and reading materials posted to the SharePoint site for this workshop, the story of the Bath, Michigan, school attack—in which 38 students, 2 teachers and 2 first responders were killed—is recounted. That tragic incident occurred in 1927. Other schools mentioned in the background piece include Cleveland, Lindhurst, Pearl, Westside, Columbine, Red Lake, Nickel Mines, Virginia Tech, Chardon, and Sandy Hook. Another school name was added to the list in just the last 7 weeks [October 24, 2014]: Marysville-Pilchuck in Washington State. In April of this year [2014], a knife-wielding high school sophomore went on a rampage at the Franklin Regional High School in Murrysville, Pennsylvania, stabbing 20 students. The consolation, if there is any, is that no one died.

Are there common denominators with any of these attacks? It might be that the perpetrator acted out of frustration, or had emotional issues, or there were any other number of triggering events. We have a few experts present who understand that better than most of us, and it will be important to keep the subject in mind. A large part of our effort, though, is—regardless of what prompted the event—what should school districts and school administrators be doing to plan a response to an attack? Once something happens, what systems, features, instructions, procedures and plans does a school have in place? What should local law enforcement, fire and EMS personnel be expecting?

I am painfully aware, as you all are, of the challenges to providing life safety to school students, staff, and emergency responders in light of the actions of hostile intruders and related threats. Providing life safety from fire—something that NFPA already excels at—is a simple task in comparison to protecting students, faculty, and others from these disturbing events. We are here to identify and explore those overlaps between fire, building, and life safety code rules that bump up against the equally important rules meant to address the security problem and its solutions. The pathway and options we have, or even ones we have yet to think of, including the means for delivering those solutions—be it with better codes and standards, brick-and-mortar building features, operating procedures, or most likely a combination of all of these. This is what we are here to discuss.

NFPA staff told me they have received questions about some well-intentioned ideas that have been put forth. Most of these involve the use of some type of device that can further secure the lock on a classroom door, delay the evacuation of students when the fire alarm is activated, wedge the door so it can't be opened, or lock-in-place the hydraulic closer found on many doors. Even NFPA's own membership magazine, the *NFPA Journal*, recently unknowingly ran an ad for a product that could be used to "*lock down any door in an emergency*"—something that is actually prohibited if the door is used as a part of what the NFPA codes call "the means of egress."

You may have noted in the agenda? we have some panel and breakout groups focused on first responders—the traditional first responders like those men and women who go into the buildings, directly into harm's way, while all of the occupants are running out the building and away from immediate danger. Did you ever stop to think about the other first responders—a student, a teacher, or custodial staff?

Brett Hurt, a student at the previously mentioned Franklin Regional High School, while speaking about the moments after he was stabbed, simply said "*Gracey saved my life*." Brett was referring to his friend Gracey Evans, who applied direct pressure to his stab wounds to slow the bleeding. Or what about first-year social studies teacher Megan Silberberger, who moved directly toward the student attacker at the Marysville-Pilchuck incident? Her actions likely saved others' lives. These are not trained paramedics or law enforcement personnel. They are simply people who were there and acted as they felt the need to do something.

What else do we have to worry about? What about notification to the parents who have children at the school where something is going wrong. Many school districts have an automated calling system that might be used—but when, and how, is it to be used? One text or tweet travels from inside the building to the outside world, and I have to imagine the word will spread quickly to the parents. Communication technology that can be managed by the school, as well as communication technology that can't be managed by the school, must be part of the conversation.

Who pays? Even in the world of developing construction, safety, security, and fire codes or standards, the cost of making changes in these codes is a reality. Designing, constructing, implementing, practicing, and managing the solutions takes resources—including capital resources. As I studied the agenda for this workshop, I found it quite interesting that, among other things, you will be asked how much, if any, of our current fire-related life safety can be modified or traded-off so as to better accommodate our security needs. Security and fire safety must co-exist and symbiotically enhance each other. Let's figure out how to make limited resources, including the number of hours in each school day, stretch so as to provide security at a level comparable to what we currently do with fire safety.

The next two days are sure to be a bit like being on a thrill ride—with times of calmly sitting and listening to presentations and panel discussions, and then moving at 60 miles per hour in the breakout sessions as your ideas and thoughts are organized, grouped, and voted on to reach consensus on specific issues. Concerning the breakout groups, you have all been pre-assigned to a group so we can get a good mix of input. We will cover this later in the day, but just so you know:

GROUP A: on Codes. Red Dot on Badge

GROUP B: on Security. Green Dot on Badge

GROUP C: on Operations. Yellow Dot on Badge

I ask that you stay engaged, contribute, listen, and participate fully. Our process is to capture the dialogue from the presentations; capture EVERY idea and solution, or way forward, in the breakout groups; and organize that into a report that NFPA will make widely available—not only to all of you—on the NFPA website. Our time frame to finalize the report is May of 2015.

I ask that you stay focused on the task at hand, network, and get to know one another. We need you to be here all day for both days; for the duration. We have a full agenda and I think you are going to like the mix of how we have organized the events. Lunch (including a working lunch tomorrow), afternoon breaks, and breakfast tomorrow morning will be provided. Immediately at the conclusion of today's session, we are hosting an informal reception with light snacks and drinks; the first drink is on NFPA. This will be a good time to socialize and kick back a bit.

Please note that two of NFPA's staff engineers—Robert Solomon and Ron Coté—are here to assist with the sessions and provide technical support and input over the next two days.

Before I introduce our first presenter, does anyone have any questions on the agenda or expectations?

I look forward to participating with you in the workshop. Again, welcome!

Appendix F. Meeting Agenda

National Fire Protection Association (NFPA)

School Safety, Codes and Security Workshop

Wednesday - Thursday, 03-04 December 2014

College Park Marriott Hotel & Conference Center

Workshop Agenda

WORKSHOP GOALS AND OBJECTIVES:

A true challenge exists in the school environment when trying to balance the fire safety needs of the students and faculty against the equally important need to keep students and faculty safe from a hostile intruder. The sometimes competing design features and recommended actions can be in direct conflict. This workshop will gather in one place at one time the groups who have to work together to help us find the solutions to this problem.

OVERARCHING AND RELEVANT TOPIC AREAS:

Workshop Questions:

- What are the practical, code complying solutions for protecting students/faculty during an active threat scenario involving guns, knives, bombs and other weapons?
- What are the protocols from first responders (law enforcement, EMS, fire department) who respond to such incidents?
- What challenges face school administrators with regard to implementing building based (brick and mortar) solutions and operational solutions?
- What security technologies/standards exist that need more recognition?

DAY ONE AGENDA (03 DECEMBER 2014):

8:30 am	Coffee/Continental Breakfast	
9:00 am	***Welcome and Opening Remarks***	**James Milke**, Professor and Chair, Department of Fire Protection Engineering, University of Maryland **Ernest Grant**, Outreach Nurse Clinician, UNC Hospitals, Chapel Hill, NC, and Chairman of the Board, NFPA
9:30 am	***Sandy Hook Elementary - A Review***	**Craig Russell**, Director, State and School Construction Support Services, Department of State Administrative Services (CT)
10:30 am	Networking Break	
10:45 am	**Panel Discussion**: ***When Codes and Security Collide***	*Discussion Leader*: **Richard Widup,** Associate Director for Global Corporate Security at Mead Johnson Nutrition and President, American Society for Industrial Security, ASIS International (IN) *Panelists*: **Max Gandy**, Church of Jesus Christ of Latter-day Saints (UT), NFPA Technical Committee on Educational Occupancies **Forrest Williams**, Supervisor, Minnesota State Fire Marshal Division (MN), International Fire Marshals Association (IFMA) **Larry Fennelly**, Litigation Consultants, Inc. (MA), American Society for Industrial Security (ASIS International) **Edward Paulk**, Alabama State Fire Marshal (AL), National Association of State Fire Marshals (NASFM) **Brian Minnich**, Associate, Rubeling & Associates Inc. (MD), American Institute of Architects (AIA)
12:00 pm	Lunch	

1:10 pm	**Panel Discussion**: ***First Responder Challenges***	*Discussion Leader*: **Ken Isman**, PE, Clinical Professor, Department of Fire Protection Engineering, University of Maryland (MD) *Panelists*: **William Modzeleski**, Senior Consultant, Sigma Threat Management Assoc. (DE), National Institute of Justice (NIJ) **Patrick Morrison**, Assistant to the General President for Occupational Health, Safety and Medicine (DC), International Association of Fire Fighters (IAFF) **James Schwartz**, Fire Chief, Arlington County Fire Department (VA), International Association of Fire Chiefs (IAFC) **Katherine Schweit**, JD, Supervisory Special Agent, Federal Bureau of Investigation (DC), Federal Bureau of Investigation (FBI) **Oneil Ormsby**, Lieutenant, Montgomery County Police Dept. (MD), International Association of Chiefs of Police (IACP)
2:15 pm	**Breakout Session Framing:** ***Creating Cohesive Code Rules, Protocols, and Integration***	Energetics
2:20 pm	BREAK and reconvene in Breakout Sessions – Concurrent sessions focusing on regulatory, operational, and security topics as related to school safety & security	
2:35 pm	**Breakout Session 1**: *Laying the ground work*	Workshop Groups
3:25 pm	**Breakout Session 2:** *Challenges*	Workshop Groups
4:05 pm	**Breakout Session 3:** *Improving the current protocol*	Workshop Groups
4:45 pm	**Prioritization Session**	Workshop Groups
5:00 pm	Break and Return to Plenary	
5:15 pm	**Day One Readouts, Day Two Instructions, Closing Remarks**	Plenary
5:30 pm	Adjourn Day One	

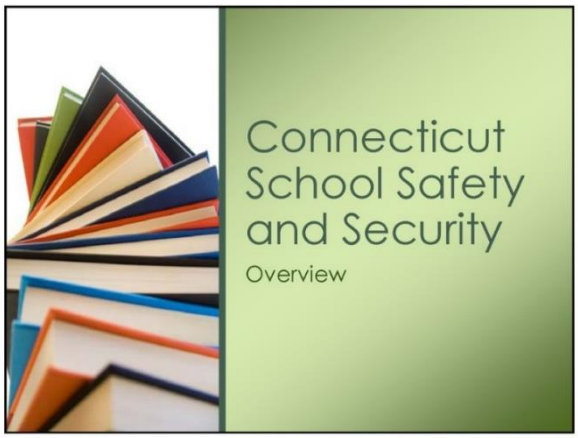
DAY TWO AGENDA (04 DECEMBER 2014):

7:45 am	***Day Two Opening*** ***Review of Day One Priorities***	Plenary
8:00 am	***Day 1 Summary;*** ***Introduction to Day 2***	Plenary
8:15 am	**Panel Discussion** ***Anne Arundel County Schools-Student, Faculty, and Visitor Safety***	*Discussion Leader*: **Alex L. Szachnowicz**, P.E., Chief Operating Officer, Anne Arundel County Public Schools (MD) Panelists: **Robert A. Yatsuk**, Supervisor of School Security, Anne Arundel County Public Schools, (MD) **Lieutenant J. Doyle Batten**, Commander, School Safety Section, Anne Arundel County Police Department (MD)
9:15 am	***Return to Breakout Sessions*** Small group work: Concurrent sessions focusing on regulatory, operational, and security topics as related to school safety and security	Workshop Groups
12:00 pm	Working Lunch—Breakout Sessions Continue	
1:15 pm	***Breakout Groups Reports – What are the Ways Forward***	Plenary
2:00 pm	***Next Steps***	Plenary
2:15 pm	***Concluding Remarks and Comments from Participants***	Plenary
2:30 pm	Adjourn Day Two	

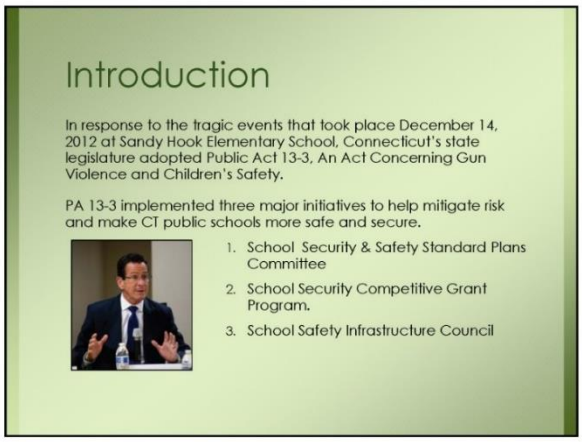
Appendix G. *Connecticut School Safety and Security* – An Overview Presentation

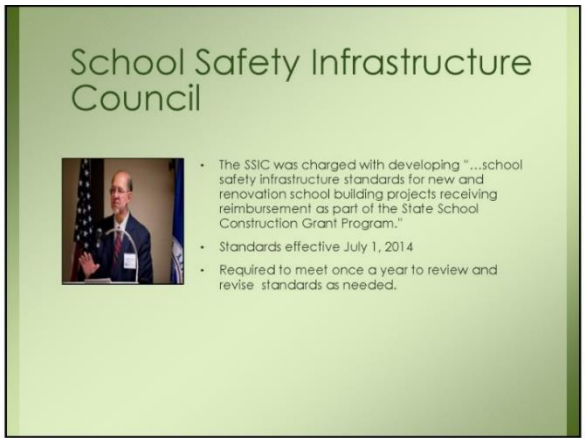
The threat of school violence in Connecticut schools, driven by the horrific events of December 14, 2012, in Newtown, Connecticut, resulted in the passage of the State of Connecticut Public Act No. 13-3, *An Act Concerning Gun Violence Prevention and Children's Safety*.[9] The following presentation, by Craig Russell, Director, State and School Construction Support Services, Department of State Administrative Services (CT), examines the different aspects of the state law and the manner in which the law makes Connecticut's schools safer and more secure. This presentation was provided to participants at the beginning of the workshop as a means to set the stage for the workshop that followed.

[9]State of Connecticut, General Assembly, Public Act No. 13-3, *An Act Concerning Gun Violence Prevention and Children's Safety*, accessed February 20, 2015. http://www.cga.ct.gov/2013/ACT/PA/2013PA-00003-R00SB-01160-PA.htm.

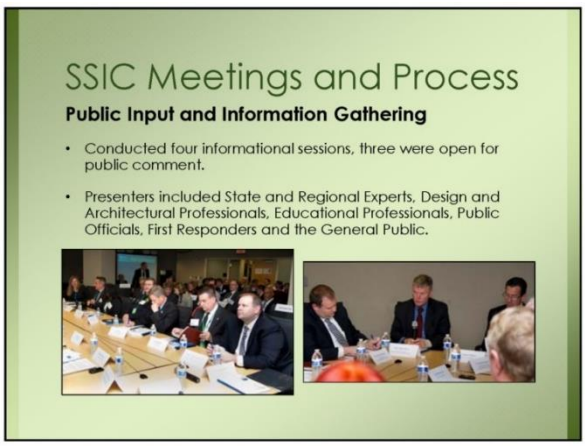

Connecticut
School Safety
and Security
Overview


School Security
Competitive Grant Program
• Available to all Connecticut public and private schools
• $33.5 million awarded to schools for improvements to existing school security infrastructure


Introduction
In response to the tragic events that took place December 14, 2012 at Sandy Hook Elementary School, Connecticut's state legislature adopted Public Act 13-3, An Act Concerning Gun Violence and Children's Safety.
PA 13-3 implemented three major initiatives to help mitigate risk and make CT public schools more safe and secure.
1. School Security & Safety Standard Plans Committee
2. School Security Competitive Grant Program.
3. School Safety Infrastructure Council


School Safety Infrastructure Council
• The SSIC was charged with developing "...school safety infrastructure standards for new and renovation school building projects receiving reimbursement as part of the State School Construction Grant Program."
• Standards effective July 1, 2014
• Required to meet once a year to review and revise standards as needed.


School Security & Safety Plan Standards Committee
School Security and Safety Plan Standards
• Partnership between DESPP & SDE
• Charged with developing school security and safety plan standards by coordinating with local emergency operations plans and community resources.
• Effective January 1, 2014


SSIC Meetings and Process
Public Input and Information Gathering
• Conducted four informational sessions, three were open for public comment.
• Presenters included State and Regional Experts, Design and Architectural Professionals, Educational Professionals, Public Officials, First Responders and the General Public.

SSIC Meetings and Process

Analysis & Findings

- Working sessions from October through December
  - Worked closely with the U.S. Department of Homeland Security (DHS) Science and Technology (S&T) Division on developing risk assessment methodology.
  - Researched best practices other states have made with regard to school security guidance – Colorado, Florida, North Carolina, California, and Virginia

Common themes form public information gathering & best practices

- A uniform school security assessment procedure
- The development of security standards should coincide with the needs of local communities
- School safety and security standards cannot compromise fire and life safety codes
- Security standards should preserve a welcoming educational environment for children
- The school building planning process should be inclusive of all local decision makers

Uniform Security Risk Assessment

- A uniform threat assessment should be completed during the conceptual phase of design
- A uniform threat assessment must be an inclusive process:
  - Fire, police, medical, school, building and other officials
  - Important to assessment process, but also important for the design and construction phases to ensure collaboration

SSIC Findings for Connecticut

- No uniform standard exists for safety and security design features for Connecticut public schools
- Security features vary widely among schools
- A uniform comprehensive threat assessment process and corresponding school security infrastructure standards are needed to help ensure safety
- School security infrastructure planning must take an "All Hazards" approach

Uniform Risk Assessment Tool

Risk Assessment Major Components

1. Threat Assessment
2. Consequences or Severity
3. Vulnerabilities
4. Compliance

SSIC Final Report

- Effective date of July 1, 2014
  - All new and renovation School Construction Projects must comply with standards after effective date.
- Legislative Process
  - Meetings and Public Hearings
- Required to meet annually to review and update standards

IRVS for Schools – Major Components

Three Major Components

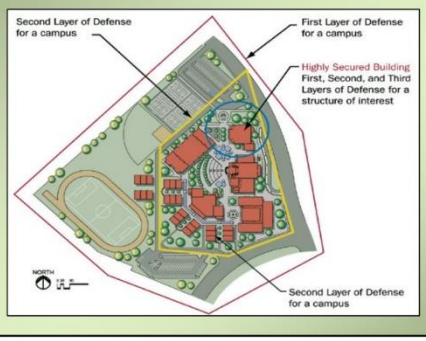
- School Safety Level
- Undesirable Events
- Level of Protection

Development of Standards

School Safety Infrastructure Standards

- **Three Distinct Components**
  1. Mandatory Compliance Areas
  2. Critical Compliance Areas
  3. Other Areas

Development of Standards



Development of Standards

Mandatory Compliance Areas

Application of Standards

1. The Four D's
   - Deter, Detect, Delay, Deny
2. CPTED
   - Crime Prevention Through Environmental Design

Development of Standards

Critical Compliance Areas

1. School Site Perimeter;
2. Parking Areas & Vehicular and Pedestrian Routes;
3. Recreational Areas;
4. School Building Exterior
5. School Building Interior
6. Roofs;
7. Critical Assets/Utilities;
8. Communication Systems; and
9. Other Areas

Application of Standards

Protective infrastructure design features must be included in all levels or layers of school facility construction including:

- Site development and preparation
- Perimeter boundaries and access points
- Secondary perimeters up to the building exterior
- The interior building itself

Renderings of Sandy Hook School courtesy of Svigals + Partners; & DVS

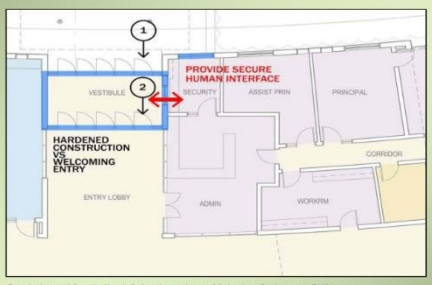
Deter / Territorial Reinforcement

Use physical and natural barriers to express ownership over an area and further distinguish public and private areas.

Renderings of Sandy Hook School courtesy of Svigals + Partners; & DVS

Deny / Target Hardening

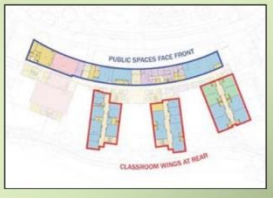
Use of features that prohibit entry or accessibility.



Renderings of Sandy Hook School courtesy of Svigals + Partners; & DVS

Detect / Natural Surveillance

- Monitor large areas to detect intruders.
- Use physical features to keep intruders easily observable.



Renderings of Sandy Hook School courtesy of Svigals + Partners; & DVS

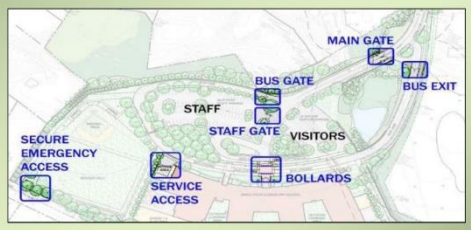
Implementation of the Standards

Technical Compliance Manual

- Descriptive analysis of specific standards with cost effective options to mitigate risk.
- Mitigation measures are performance based.
- Local officials have the opportunity to make decisions, at the local level, on how to mitigate risk and apply safety standards to meet the specific security and programmatic objectives specific to their school facility.

Delay / Access Control

Strategic placement of points of entry /egress, fencing, landscaping and lighting to create a perception of risk to potential intruders.



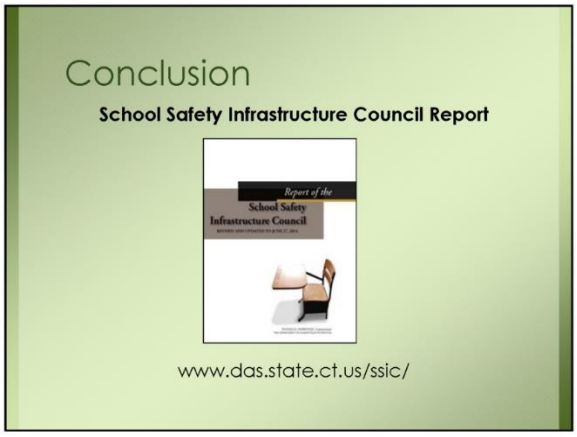
Renderings of Sandy Hook School courtesy of Svigals + Partners; & DVS

Implementation of the Standards

Resistance Value Charts

Resistance Value Chart

Level of Protection - Resistance Values					
Items/Feature	Cross Reference	1 - Very Low	2 - Low	3 - Moderate	4 - High	5 - Very High
Entrance/Vestibule Doors						
Aluminum/Glass						
Hollow Metal						
Solid Core Wood						
Classroom Doors						
Hollow Metal						
Solid Core Wood						


Conclusion
School Safety Infrastructure Council Report
Report of the
School Safety
Infrastructure Council
www.das.state.ct.us/ssic/

Appendix H. Panel Questions

The following represents the questions that our panelists were asked, in advance, to consider.

PANEL 1: CODES AND SECURITY

December 3, 2014 10:45 AM–12:00 Noon

Richard Widdup, Moderator

Panel Members

Max Gandy, *Mechanical Engineer, AEC/DFS, Meetinghouse Facilities Department, Church of Jesus Christ of Latter-day Saints* (UT) **NFPA Committee**

Forrest Williams, *Supervisor, Minnesota State Fire Marshal Division (MN)* **IFMA**

Larry Fennelly, *Litigation Consultants, Inc. (MA)* **ASIS**

Brian Minnich, *Associate, Rubeling & Associates Inc. (MD)* **AIA**

Edward Paulk, *Alabama State Fire Marshal (AL)* **NASFM**

As you see, my background is on the security side of the equation. Many groups and organizations clearly have contributions to make in this area and as we heard this morning, we all need to make sure we are communicating across our lines of expertise. There are some interesting ideas that have been championed to address this problem, but we can't simply do that at the expense of one goal over another. In other words, security cannot trump fire safety – and fire safety cannot trump security in the built environment. If we really are to address this correlation between security, fire safety and codes, we cannot look at security as something that is simply "bolted onto" the building design blueprints. It has to be there from the beginning. We would never think after the design is half completed that we need some way to heat and cool the building, but that is what happens with our security process at times. I think we all could agree that goals and objectives relating to security need to be present from the start. So, with that let's get to our panel.

1. This first question is for everyone to answer. Each of you is on this panel because you represent a specific entity or organization. Please share with us if your organization has a driving document or resource that your constituency refers to or relates to. I know that ASIS has a resource document our members can utilize. What can you tell us about that resource?
2. Next, let's look specifically at the building and systems design part of the equation. What can you tell us about the hurdles or challenges you find when new school buildings are being designed or when school rehabilitation projects are being undertaken. How and where does the direction come to address the security needs?
3. Do any of you have a formalized procedure or checklist that you turn to for this process? What does that look like?

4. In general terms, what is your experience with the 'design team' involved when the security issue is being contemplated? For example, is it simply being directed by the school administration or is an effort being made to get a security consultant on that team? Do you see code consultants being involved as well?
5. Forrest and Ed-you fall into the Authority Having Jurisdiction (AHJ) category, thus you ultimately have to approve these designs that might integrate some type of security device or system. Tell us what makes you a little nervous about what you are seeing. Where do you see that the building, fire and life safety codes need to do a better job with this subject?
6. I am going to put Max on the spot here for a few minutes-and for a few good reasons. You are wearing about three hats at the workshop: As a member of the NFPA Technical Committee on Educational Occupancies, you work in the parochial or private school arena, and you do school construction in multiple states. I want to focus on the multiple state issues. What can you share with us about the differences you encounter among the various states' provisions for security, or even among the various jurisdictions' provisions within a state?
7. What does everyone see as an emerging technology, design innovation, existing technology or idea that might have promise?

PANEL 2: FIRST RESPONDER CHALLENGES

December 3, 2014 1:00 PM–2:15 PM

Ken Isman, Moderator

Panel Members

William Modzelesk, *Senior Consultant, Sigma Threat Management Associates (DE)* **NIJ**

Patrick Morrison, *Assistant to the General President for Occupational Health, Safety and Medicine (DC)* **IAFF**

James Schwartz, *Fire Chief, Arlington County Fire Department (VA)* **IAFC**

Katherine Schweit, JD, *Supervisory Special Agent, Federal Bureau of Investigation (DC)* **FBI**

Oneil Ormsby, *Lieutenant, Montgomery County Police Department (MD) International Association of Chiefs of Police* (**IACP**)

Although I am now on the faculty at the University, I spent the previous 25 years of my career working for the National Fire Sprinkler Association. I also know a little something about what Pat and Chief Schwartz do on a regular basis. My father, Warren Isman – who passed away in 1991 – had a long and distinguished career in the fire service including serving as the Fire Chief in both Montgomery County, Maryland and Fairfax, Virginia. I know that the challenges faced by the fire service and law enforcement are very different now than they were in 1991 and very dynamic. Our morning panel dove into some of the built environment challenges that can crop up when we try to overlay security into building design as an afterthought. And even when we don't do that, some of those well-intentioned ideas may inadvertently violate some other code provision or operational aspect. Likewise, if our police, fire and other first responder resources aren't thinking about this scenario, it would be difficult to manage that on the fly. Unfortunately, it is something that many agencies do have to consider and plan for. So let's get started.

1. Katherine, you have a unique national perspective on this topic and you have authored numerous reports and studies that deal with the active shooter subject. Thinking specifically of school violence, can you give us some insight into the profile of the student attacker? What are some of the underlying issues that cause a student to act out? How prevalent are the signs that something is about to boil over and happen?
2. Bill, the NIJ is an agency within the Department of Justice that some people may not be familiar with. If you would, please give us a high level description of NIJ and how it interacts with local law enforcement and other federal law enforcement agencies.
3. The IACP, IAFF and IAFC have all developed policy or white papers on this subject of school violence. I am going to ask each of you to:
    a. Briefly describe your organization's policy paper or position.
    b. How well does it include other first responders? For example, does the IAFC paper include an EMS component and a law enforcement component?

4. At the local levels, we periodically hear that an "active shooter" drill was being carried out. There seems to be a mix of reactions to this – it is too realistic or scary for the students; it is realistic but they can know what to expect. Please share your philosophy on this – good, bad, or it depends? And also tell us, based on your knowledge and experience, who is invited to participate in such drills.
5. In his opening remarks this morning, Ernest Grant mentioned the challenges with communication to the outside world. In an instant, social media messages can be *en route* to parents, friends or others saying *someone is shooting a gun in our school* – even as a 911 call is placed to summon the police and fire departments. What ideas and advice would you have for the various first responder agencies or school administrators in terms of managing a throng of cars with worried parents converging on the school property as police, ambulance and fire department vehicles are arriving as well? Is it even realistic to try and manage that?
6. Please give us some ideas of the concept called a "lockdown." I surmise that a lockdown commences before the traditional first responders arrive on the scene, thus it has some crossover to our codes segment from this morning. What instruction, if any, should the school have in place for lockdowns? What is your view on how this idea is used since a lockdown can keep occupants in and keep others out? How do you get INTO the building? How do you UNDO the lockdown?

PANEL 3: Anne Arundel County Schools-Student, Faculty and Visitor Safety

December 4, 2014 8:15 AM–9:15 AM

Alex L. Szachnowicz, P.E., *Chief Operating Officer, Anne Arundel County Public Schools (MD)*, Moderator

Panel Members

Robert A. Yatsuk, *Supervisor of School Security, Anne Arundel County Public Schools (MD)*

Lieutenant J. Doyle Batten, *Commander, School Safety Section, Anne Arundel County Police Department (MD)*

Appendix I. Summary of Panel Discussions

The following summary of the panel member discussions was prepared by the NFPA staff. It is not intended to capture every detail but rather some of the main points that were put forth during the panel discussions.

PANEL 1 – CODES AND SECURITY

Question 1. It was noted that most of the groups on the panel do have one or more resource documents. Please refer to the NFPA website for links to documents that are used.

Question 2. In some cases, it is an afterthought. Money is often times a driving factor, what is left to address the security issue? Is there money in the design contract to hire that level of expertise? Design is based on providing an educational environment first – then everything else follows. Didn't have this talk 10 years ago. How do you design for something (hazard) you don't yet know about? In theory, there should be a minimal difference between new versus existing provisions when looking at door locking/configuration options.

Question 3. This is oftentimes a dilemma for the AHJ. The checklist is basically what is in the prevailing code (NFPA/ICC). At present, these codes do not tell us how to lock a door against egress. Minnesota has developed a resource guide that supplements the adopted state codes to help with these decisions.

Question 4. Difficult to manage these unless security is being integrated from the project initiation (not as an afterthought). Design Teams — no consistency between projects. Teams are always a mix, almost an afterthought as a cost line item. Document your design team meeting. Most criteria come from Standards and Guidelines, cite a Standard. Haven't typically seen security consultants or the team. Sometimes security is a separate contract under the project. Project architect may not have awareness of the contract — make sure issue is raised from the beginning.

Question 5. Main concerns are non-compliant access control doors. Inspection, Testing and Maintenance-ITM- of the systems. Must take care of the equipment. Codes and standards require the ITM provisions, but hard to enforce these provisions. Schools need to make sure requirements are followed if certain security functions are allowed based on reliability of fire protection systems. With regard to the non-compliant access control doors, motion sensor or manual release devices are missing. Doors are locked automatically after everyone arrives to the school. Only partly a code issue. If everyone is locked in, use something different (lock set) so occupants do not become trapped.

Question 6. It can be challenging. Rules and approaches vary from state to state and even within a state. For example, teachers in Utah are permitted to carry concealed weapons to school. We work to maintain continuity between the school and local jurisdictions. In general terms, we try to follow provisions of the local jurisdictions. Unique hazards for that particular geographic region must also be considered. Plan for other hazards beyond fire.

Question 7. Most are common sense measures. Need to start process to tweak fire codes. Safety and security are different but need to figure out the balance. Look at other possible solutions from outside the U.S. — Israel, Europe. Use/specify equipment that has been tested and listed. Keep glazing opaque. Harden building entrance points (sally ports). See how/where building IT systems fit in. LED lighting. Integrate visitor management system. Focus on everyday security. Need clear glazing to see what is going on. Put students into a "safe room" by really making it safe. Easy to shoot through glass sidelight — thus avoid if possible. Use hotel lock set. Grade level window weakness.

PANEL 2 – FIRST RESPONDER CHALLENGES

Question 1. Thinking of the typical profile, the following is what we see: Contextual behavior — mostly male, they work alone to plan/execute the event, have a real or perceived grievance against someone or something. The threat usually comes from inside. The signs or clues that someone is about to act out are not always obvious. The idea of a Threat Assessment Team is one method to help identify conditions or circumstances that tell you something is not right.

Question 2. NIJ [National Institute of Justice] is an arm of the Department of Justice. NIJ works to provide policy and research advances that can be used by local law enforcement entities. NIJ's mission is carried out through research and development of standards among other avenues. NIJ has had an active role with this subject having worked with the U.S. Department of Education (and others) on this challenge. Overall, our schools are safe. The focus is on education, where it should be. Safety is sometimes an afterthought. Grant programs for schools to look at upgrading safety are an option. NIJ and others offer many resources, but money is still needed to fully implement these ideas/solutions.

Question 3. It was noted that the groups on the panel do have one or more resource documents. Please refer to the NFPA website for links to documents that are used. These papers are inclusive of law enforcement, fire and EMS roles and responsibilities. One concept on the fire/EMS side is the emergence of the Rescue Task Force (RTF). The RTF is designed to stage in the "warm" zone of the event and then be prepared to move into the "hot" zone along with other first responders (law enforcement) when entry is made into the building. Tactical Emergency Medical Care is a related concept. Two issues were discussed by the first responders. The first involves the joint command challenge. The policy/plan must lay out the hierarchy. The second is that a behavioral health program must be in place for first responders after the event.

Question 4. There was no broad consensus on this idea. It isn't a "YES" or "NO" — it is a "DEPENDS." One panel member indicated this is not the best way to drill. Montgomery County uses these drills as a learning exercise for the police department and involves other agencies. Train to your school community — some administrations may not want these types of drills. Tabletop operations/ exercises are another option. This might include a walk-through after hours.

Question 5. Communication is a challenge at multiple levels — within the school; from the school to the outside world; and between agencies. How do you know if it is a credible source? What is needed to verify that you have an actual emergency? Need to have a place to send people. Need to have alternative communication plans. Need to have a robust communication systems — MNS [mass notification system]. Need to have standardized messaging. What information are you relaying to parents and the media — a single voice is needed. The plan also needs to include a "transportation sector." You don't want an influx of vehicles converging on the property.

Question 6. Lockdown Drill — drill or practice it if you plan to use this concept; use it to create time. Would be nice to see better building identification features: color-coded hallways or floors; numbers on room doors. These features would help in the process to "clear" rooms or spaces when a lockdown is in place. As a first responder, you need to know how the lockdown is being done in the specific school. If there are no provisions established ahead of time, that is a big problem. Some police departments now are equipped with breach kits to get through locked doors/spaces.

Question 7. A measurable percentage of events are over prior to the arrival of the first responders. Teacher training should be a part of the dialogue. Do something to save time. Closing or locking doors can slow an intruder. FBI/DHS "*RUN-HIDE-FIGHT*" concept is based on buying time to protect the occupants. As noted earlier, teachers or even students will intervene to neutralize the threat.

PANEL 3 – ANNE ARUNDEL COUNTY SCHOOLS-STUDENT, FACULTY, AND VISITOR SAFETY

Alex: Overview/High Level Discussion

Anne Arundel County Schools

– 42nd largest in US

– 15,000 employees; 80,000 students

– 13 million square feet of building space

– Important to keep balance between education goals/function of the school and safety

– PIOs between school, fire, police know each other on first-name basis; allows for clear communication channels

– Deterrents: Target hardening concepts include:

- Apply CPTED [crime prevention through environmental design] criteria in all designs
- Natural surveillance — awareness of sightlines both outside and inside
- Territorial reinforcement: "This is Our House"
- Access control — direct people where to go
- Lighting
- Camera feeds — live video, fed into central location
- Sally port vestibule
- Layering is critical
- Audio/video intercom phone — challenge questions
- Driver's license goes into RAPTOR software system, which provides almost instant information about the individual
- ID badges by worn by all staff
- Proximity locks
- Portable classroom buildings — 6 to 8 ft high fences installed around the structures
- NFPA code compliance — 100%

Robert: School Security in the County

- ERCM (Emergency Response and Crisis Management) grants through U.S. Department of Education — overlooked program that helps support safety initiatives
- Security is high priority; supported at the highest level
- Individual security plans — required by the state; accessible by the county police and fire departments
- Planning includes shutdown of water, electricity, gas
- Lockdown and lockout drills.
- Drills done during class, between classes, during lunch
- Six system-wide scenarios in addition to the 8 fire drills; tornado, hazmat, lockdown, lockout.
- School-based ICS team; also a centralized system for the county
- Important for first responder agencies to have same message

- "CONNECT ED" system – reverse 911 – social media – use these to send information out to everyone.
- Repeater system and radios — each school has a repeater system. Radio types have been standardized (interoperability). NOAA weather radios for weather hazard events.
- Emergency kits available
- Schools have fully equipped trauma kits.
- School Security Council: Meets 3 times a year to review plans and contingencies

Doyle: School Resource Officers in the County

- 710 positions
- SRO — uniformed officers assigned to school or set of schools
- Need to relate to the whole school — students, teachers, faculty, and custodians
- Try to get officers who fit best into circumstance. Officer has to be part of the environment/school.
- SROs — you just don't put a street cop in without special training.
- Need to be trained to be respectful to your customers
- Goal is to avoid the "school to prison" pipeline.
- Officers need to be able to speak to students about other things — relationship building.
- Training. County provides great opportunities for the SROs. Getting to visit with first responders at Columbine was eye opening and important experience.
    - People are the main failure point.
- Need to practice all aspects of your job/training to the extent you can.
- School Safety Act of 2010
- Need to have awareness of what is going on outside of school — previous years, you couldn't talk about it. Student acts out outside of school. Reporting systems becoming more accessible to law enforcement — something happened at home, we need to know.
- Identifying a student with potential problems/issues outside of school is important. SRO and schools now get the reports.
- Anonymous reporting system is new option. Safe way to identify possible threat.
- Police and fire schools/academies — now working with local mental health folks, social workers, etc.; helps to look for signs of trouble.