Report of the

School Safety Infrastructure Council

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THE DEPARTMENT OF ADMINISTRATIVE SERVICES

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Introduction

Recognizing the need for an "all hazards" emergency preparedness and response capability, and driven by the threat of school violence in Connecticut schools and particularly by the December 14, 2012 Newtown shootings, Connecticut state government has re-evaluated its role as a partner in ensuring the safety and security of the state's local educational facilities.

For decades state government has been a primary funding source for local school construction, but has not established uniform preventative school security design standards. In practice, virtually all school safety infrastructure decisions have been made at the local level leading to school construction projects with significantly different security design features across school district boundaries. While maintaining the ability of local school boards to design facilities which are responsive to community needs and conducive to the educational process, the need to achieve a heightened and more uniform level of school safety infrastructure design in each state funded project, as provided for in Public Act 13-3, is now policy.

If the events of the recent past have taught us anything, it is that state government must use its collective resources more wisely and with greater purpose. By tying state school construction investments to local compliance with widely agreed upon security standards, state government can help achieve the goal of more secure schools through the use of preventative infrastructure design techniques.

Today state government must assume a new role and expanded responsibility.

Long a primary source of school construction funding, state government will now use its role to require a more comprehensive and uniform consideration of school security measures at the local level. By establishing a universal school security assessment process, by identifying areas of critical concern and by requiring mitigation of observed deficiencies, the state will assume greater responsibility in establishing a more uniform level of school security throughout the state.

Individually, Connecticut's 165 school districts are limited in what they can plan and achieve in moving toward the goal of improved statewide school security. However, Connecticut state government, with the commitment of its Chief Executive and legislative leadership clearly aligned, can effectively move the state forward. Acting under the provisions of P.A. 13-3 Governor Malloy has established a strong partnership with the federal Department of Homeland Security (DHS) and has succeeded in mobilizing

national expertise to address the challenge of improving school safety infrastructure design. This partnership has brought together security experts from across federal agencies and from other states to help design and develop new tools for use in improving school safety.

Similarly, the establishment of Critical Compliance Standards and a process to ensure that local school districts meet or exceed these standards is intended to be a cooperative venture in which Connecticut municipalities and local school districts work as partners with state agencies to achieve the goal of improved school security design.

The state's role in this process does not end with funding state construction and in providing leadership in securing resources and expertise needed to improve school security. It also extends to mobilizing all affected parties in recognizing the importance of this undertaking, in sharing information and technology and in making the goal of improved school safety infrastructure a shared statewide objective. In this effort private vendors and a host of professional associations including the American Council of Engineering Companies of Connecticut, the American Institute of Architects, the Associated Builders and Contractors, the Associated General Contractors of Connecticut and the Connecticut School Construction Coalition have cooperated with the School Safety Infrastructure Council (SSIC) in promoting solutions to the challenging issues of improved school security design.

Finally, while the role of state government may be changing in some respects, the state's commitment to providing a warm, welcoming and nurturing educational environment in local schools is unchanged. Despite the urgency of achieving school security goals, the SSIC has recognized, from its inception, the need to preserve an educational environment that maintains an open, welcoming and supportive place for teaching and learning. The SSIC believes the framework established in this report and its associated compliance standards, will advance the cause of school security, while affording local school districts the opportunity to safeguard the local school environment which is essential to education.

Since the tragedy in Newtown, Connecticut state government has undertaken a number of initiatives to improve security in local schools. Among these efforts are two distinct requirements passed by the legislature and signed by Governor Malloy in Public Act 13-3, An Act Concerning Gun Violence Prevention and Children's Safety:

1. Development of School Safety Infrastructure Standards. P.A. 13-3, sections 80 to 83, established the School Safety Infrastructure Council (SSIC). This Council was comprised of nine members - the Commissioners of the Departments of Administrative Services, Education and Emergency Services and Public Protection, plus six members with varying expertise in school security related fields, appointed by legislative leaders.

Under P.A. 13-3 the SSIC is charged with developing "…school safety infrastructure standards for school building projects under chapter 173 of general statutes and projects receiving reimbursement as part of the school security infrastructure competitive grant program." The legislation directs the SSIC to examine a variety of school building safety infrastructure areas, including entryways, ballistic glass, solid core doors, locking systems, closed circuit television monitoring, use of security cameras, classroom security and other security infrastructure features and design strategies.

These standards are to be developed by January 1, 2014 and submitted to the legislature at that time. Effective July 1, 2014, all school construction and renovation applications for state funding must comply with these standards, or they will not be approved. Additionally, state grants provided pursuant to the School Security Infrastructure Competitive Grant Program, jointly administered by the Departments of Emergency Services and Public Protection (DESPP), Education (SDE) and Administrative Services (DAS) under section 84 of P.A. 13-3, must be provided in accordance with the SSIC standards on and after these standards are submitted. Finally, any model blueprints for new school building projects that are developed by the School Building Project Advisory Council pursuant to Conn. Gen. Stat. § 10-292q must include the SSIC standards.

Appendix A of this report provides the School Safety Infrastructure Standards.

2. Development of School Security and Safety Plan Standards. P.A. 13-3 (section 86) also requires the Department of Emergency Services and Public Protection (DESPP), in consultation with the Department of Education (SDE), to develop school security and safety plan standards to provide guidance in emergency plan management and to further assist school districts in managing practices and policies relating to school security and safety planning. These standards are intended to assist school districts in developing operational school security procedures to respond to security events.

   The template for the School Security and Safety Plan is currently being developed and will be completed by January 1, 2014.

In Connecticut the concern for school safety is not new. Safety is a consideration in virtually every school construction project. However, despite this concern, the state lacks uniform statewide methodologies for assessing and addressing school safety infrastructure design. Until now school safety has been almost entirely determined by local decision makers, leading to a very uneven and unpredictable level of school security design across school district lines.

As an alternative, a uniform comprehensive threat-assessment process and consistent standards and corresponding building plans will help ensure a threshold level of awareness, responsiveness and security.

Implicit in the authorizing legislation, and a starting point for the SSIC, is the public policy determination that schools are vulnerable facilities subject to the threat of violence with the potential for loss of life or serious injury to students and staff. Also implicit in that policy is the belief that protective school design techniques can make school grounds and school buildings safer places in which to conduct educational activities.

This report summarizes the findings of the School Safety Infrastructure Council, and covers the following areas:

Legislative Authorization
SSIC Meetings and Process
SSIC Findings & Guiding Principles

Selection and Development of a Uniform School Security Assessment Tool
Selection and Development of School Safety Infrastructure Standards
Mandatory Compliance Areas
Critical Compliance Areas
Guideline Recommendations
Roll Out Plans
Appendices

Legislative Authorization

Sections 80 through 83 of P.A. 13-3, An Act Concerning Gun Violence Protection and Children's Safety, established the 9-member School Safety Infrastructure Council, and required the Council to develop school safety infrastructure standards by January 1, 2014. Effective July 1, 2014, all school construction and renovation applications for state funding must comply with these standards to be eligible for state funds. Effective upon submission, these standards will also be incorporated into model blueprints developed by the School Building Projects Advisory Council for new school building projects, and will be considered in School Security Infrastructure Competitive Grant Program approvals determined by the DESPP Commissioner.

Excerpts from Public Act No. 13-3 (Senate Bill No. 1160)
Relating to
The School Safety Infrastructure Council

SCHOOL SAFETY INFRASTRUCTURE COUNCIL

Sec. 80. (NEW) (Effective from passage) (a) There is established a School Safety Infrastructure Council. The council shall consist of: (1) The Commissioner of Construction Services, or the commissioner's designee; (2) the Commissioner of Emergency Services and Public Protection, or the commissioner's designee; (3) the Commissioner of Education, or the commissioner's designee; (4) one appointed by the president pro tempore of the Senate, who shall be a person with expertise in building security, preferably school building security; (5) one appointed by the speaker of the House of Representatives, who shall be a licensed professional engineer who is a structural engineer; (6) one appointed by the majority leader of the Senate, who shall be a public school administrator certified by the State Board of Education; (7) one appointed by the majority leader of the House of Representatives, who shall be a firefighter, emergency medical technician or a paramedic; (8) one appointed by the minority leader of the Senate, who shall be a school resource officer; and (9) one appointed by the minority leader of the House of Representatives, who shall be a public school teacher certified by the State Board of Education. The Commissioner of Construction Services shall serve as the chairperson of the council. The administrative staff of the Department of Construction Services shall serve as staff for the council and assist with all ministerial duties.

(b) The School Safety Infrastructure Council shall develop school safety infrastructure standards for school building projects under chapter 173 of the general statutes and proj-

ects receiving reimbursement as part of the school security infrastructure competitive grant program, pursuant to section 84 of this act. Such school safety infrastructure standards shall conform to industry standards for school building safety infrastructure and shall include, but not be limited to, standards regarding (1) entryways to school buildings and classrooms, such as, reinforcement of entryways, ballistic glass, solid core doors, double door access, computer-controlled electronic locks, remote locks on all entrance and exits and buzzer systems, (2) the use of cameras throughout the school building and at all entrances and exits, including the use of closed-circuit television monitoring, (3) penetration resistant vestibules, and (4) other security infrastructure improvements and devices as they become industry standards. The council shall meet at least annually to review and update, if necessary, the school safety infrastructure standards and make such standards available to local and regional boards of education.

(c) Not later than January 1, 2014, and annually thereafter, the School Safety Infrastructure Council shall submit the school safety infrastructure standards to the Commissioners of Emergency Services and Public Protection and Education, the School Building Projects Advisory Council, established pursuant to section 10-292q of the general statutes, as amended by this act, and the joint standing committees of the General Assembly having cognizance of matters relating to public safety and education, in accordance with the provisions of section 11-4a of the general statutes.

Sec. 81. Subsection (a) of section 10-284 of the general statutes is repealed and the following is substituted in lieu thereof (Effective July 1, 2013):

(a) The Commissioner of Education shall have authority to receive and review applications for state grants under this chapter, and the Commissioner of Construction Services shall have authority to review and approve any such application, or to disapprove any such application if (1) it does not comply with the requirements of the State Fire Marshal or the Department of Public Health, (2) it is not accompanied by a life-cycle cost analysis approved by the Commissioner of Construction Services pursuant to section 16a-38, (3) it does not comply with the provisions of sections 10-290d and 10-291, (4) it does not meet (A) the standards or requirements established in regulations adopted in accordance with section 10-287c, or (B) school building categorization requirements described in section 10-283, as amended by this act, (5) the estimated construction cost exceeds the per square foot cost for schools established in regulations adopted by the Commissioner of Construction Services for the county in which the project is proposed to be located, (6) on and after July 1, 2014, the application does not comply with the school safety infrastructure standards developed by the School Safety Infrastructure Council, pursuant to section 80 of this act, or [(6)] (7) the Commissioner of Education determines that the proposed educational specifications for or theme of the project for which the applicant requests a state grant duplicates a program offered by a technical high school or an interdistrict magnet school in the same region.

Sec. 82. Subdivision (1) of subsection (a) of section 10-283 of the general statutes is repealed and the following is substituted in lieu thereof (Effective July 1, 2013):

(a) (1) Each town or regional school district shall be eligible to apply for and accept grants for a school building project as provided in this chapter. Any town desiring a grant for a

public school building project may, by vote of its legislative body, authorize the board of education of such town to apply to the Commissioner of Education and to accept or reject such grant for the town. Any regional school board may vote to authorize the supervising agent of the regional school district to apply to the Commissioner of Education for and to accept or reject such grant for the district. Applications for such grants under this chapter shall be made by the superintendent of schools of such town or regional school district on the form provided and in the manner prescribed by the Commissioner of Construction Services. The application form shall require the superintendent of schools to affirm that the school district considered the maximization of natural light, [and] the use and feasibility of wireless connectivity technology and, on and after July 1, 2014, the school safety infrastructure standards, developed by the School Safety Infrastructure Council, pursuant to section 80 of this act, in projects for new construction and alteration or renovation of a school building. The Commissioner of Education shall review each grant application for a school building project for compliance with educational requirements and on the basis of categories for building projects established by the State Board of Education in accordance with this section, and shall evaluate, if appropriate, whether the project will assist the state in meeting the goals of the 2008 stipulation and order for Milo Sheff, et al. v. William A. O'Neill, et al. , provided grant applications submitted for purposes of subsection (a) of section 10-65 or section 10-76e shall be reviewed annually by the commissioner on the basis of the educational needs of the applicant. The Commissioner of Education shall forward each application and the category that the Commissioner of Education has assigned to each such project in accordance with subdivision (2) of this subsection to the Commissioner of Construction Services not later than August thirty-first of each fiscal year. The Commissioner of Construction Services shall review [all grant applications for school building projects on the basis of] each grant application for a school building project for compliance with standards for school [construction, established in regulation] building projects pursuant to regulations, adopted in accordance with section 10-287c, and, on and after July 1, 2014, the school safety infrastructure standards, developed by the School Safety Infrastructure Council pursuant to section 80 of this act. Notwithstanding the provisions of this chapter, the Board of Trustees of the Community-Technical Colleges on behalf of Quinebaug Valley Community College and Three Rivers Community College and the following entities that will operate an interdistrict magnet school that will assist the state in meeting the goals of the 2008 stipulation and order for Milo Sheff, et al. v. William A. O'Neill, et al. , as determined by the Commissioner of Education, may apply for and shall be eligible to receive grants for school building projects pursuant to section 10-264h for such a school: (A) The Board of Trustees of the Community-Technical Colleges on behalf of a regional community-technical college, (B) the Board of Trustees of the Connecticut State University System on behalf of a state university, (C) the Board of Trustees for The University of Connecticut on behalf of the university, (D) the board of governors for an independent college or university, as defined in section 10a-37, or the equivalent of such a board, on behalf of the independent college or university, (E) cooperative arrangements pursuant to section 10-158a, and (F) any other third-party not-for-profit corporation approved by the Commissioner of Education.

Sec. 83. Subsection (b) of section 10-292q of the general statutes is repealed and the following is substituted in lieu thereof (Effective from passage):

(b) The School Building Projects Advisory Council shall (1) develop model blueprints for new school building projects that are in accordance with industry standards for school buildings and the school safety infrastructure standards, developed pursuant to section 80 of this act, (2) conduct studies, research and analyses, and (3) make recommendations for improvements to the school building projects processes to the Governor and the joint standing committee of the General Assembly having cognizance of matters relating to appropriations and the budgets of state agencies, education and finance, revenue and bonding.

This legislation established the operational framework for the work of the SSIC.

SSIC MEETINGS AND PROCESS

Members of the SSIC, appointed in the spring of 2013, began meeting in June and approved a time line dividing the Council's work into two distinct phases:

1. Public Input and Information Gathering; and
2. Analysis and Report Writing.

1. Public Input and Information Gathering

From June through September 2013, five informational meetings were conducted, the substance of which is briefly summarized below.

At its first meeting, SSIC members were informed that the state's current school building grant program has no specific security requirements, other than those inherent in the State Building Code. While security features are eligible expenditures for new and renovate as new projects under the current school construction grant program, there are no uniform security standards, and schools vary widely in terms of what is included in local plans.

In June, the Council heard expert testimony from the State Building Inspector, the regional Director of the National Fire Protection Association, the DESPP/DEMHS Director of Emergency Management, and representatives of the state's Office of Counter Terrorism.

In July, the Council heard from design and architectural professionals from across the state, lock experts and representatives demonstrating a new interactive-interoperable real time audio/visual communication system linking schools, public safety officials, first responders, hospitals, utility companies and others. At this session representatives of the federal Department of Homeland Security presented the Integrated Rapid Visual Screening tool (a comprehensive facilities assessment model) and discussed plans for working with SSIC and other partners to adapt its use for school security purposes.

In August, a session was dedicated to hearing from educational professionals including testimony from the state's largest teacher unions, the American Federation of teachers (AFT) and the Connecticut State Education Association (CSEA) and also representatives of the Connecticut Federation of School Administrators, the Connecticut Association of Public School Superintendents, the Connecticut Association of Schools, the Connecticut Association of Boards of Education and the Connecticut Association of School Business Administrators.

A final public meeting was conducted in September for comments from public officials, police and fire professionals, first responders and members of the public. Testimony from the Hartford Chief of Police, Middletown Fire Chief and several members of the public focused on the need for effective real time emergency response communication systems, comprehensive emergency planning that balances the need for effective life safety codes compliance with planning for other threats, the need for locking devices on classroom doors, and various options concerning school windows, protective treatments and laminates.

A complete list of all those who offered comments to the SSIC is included in Appendix C.

2. Analysis and Report Writing

Beginning in October 2013, the SSIC conducted a number of working sessions involving council members, staff and invited participants. Collaboration among the three involved state agencies, the Department of Administrative Services (DAS), the State Department of Education (SDE), the Department of Emergency Services and Public Protection (DESPP), and the federal Department of Homeland Security (DHS), along with the active participation of Council members, allowed the process to proceed on the basis of a consensus building model. Appendix C contains a complete list of Council meetings.

The Department of Homeland Security (DHS), Science and Technology Directorate, provided the Council with a wealth of information concerning federal efforts to assess the security of federal buildings and the process by which identified vulnerabilities are addressed. For more than a decade that office has been involved in risk assessment and risk mitigation efforts. It has also been engaged in a project to evolve the technology used for risk assessment and mitigation at the federal level so that such technology may be used by the State of Connecticut and its local school districts in assessing school security infrastructure design. Although DHS is fully engaged in this effort, completion of the IRVS for schools is not expected until mid 2014, or later. Once the adaptation is completed, it is anticipated that this emerging school facility assessment tool can be made available to school districts in Connecticut and throughout the country.

Members of the Council were also given access to various school construction standards used in other states, materials prepared by federal agencies, demonstrations of various technologies and professional staff input.

In November, several Council members traveled to Washington D.C. to meet with officials of the DHS Science and Technology Directorate to discuss the development of the school security assessment tool known as the Integrated Rapid Visual Screening (IRVS) program. These discussions afforded both federal and state officials the opportunity to better understand the capabilities of the IRVS and how it could be further adapted as a comprehensive assessment tool at the local level.

Finally, as it undertook its work, the Council considered the relevant recommendations of the Sandy Hook Advisory Committee. The report can be found at

http://www.governor.ct.gov/malloy/lib/malloy/SHAC_Interim_Report_2013.03.18.pdf

SSIC FINDINGS & GUIDING PRINCIPLES

Based on presentations from the State Building Inspector and the Director of the Office of School Facilities, SSIC members concluded early in the process that, like many states, Connecticut's current school building grant program has no specific security requirements, with the exception of those inherent in the State Building Code. While security features are eligible expenditures under the grant program for new and renovate as new school facilities, there are no uniform safety standards, and schools vary widely in terms of what is included in local plans. As an alternative, a uniform comprehensive threat assessment process and corresponding school security infrastructure standards will help ensure a threshold level of awareness, responsiveness and security compliance in Connecticut schools. The provisions of the School Facilities Grant program (Chapter 173) will be modified to require school systems seeking state funding to certify compliance with the new School Safety Infrastructure Standards and related requirements.

Based on testimony from experts at the state, regional and federal level, the Council determined that school safety infrastructure planning should be based on an "all hazards" assessment, and that school design safety standards should encourage the use of protective infrastructure design features 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; and
the interior of the building itself.

Another important point, made repeatedly by professionals in the field, is that the conduct of these local uniform assessments must be an inclusive process involving police, fire, medical, school and other local officials. This public safety team approach is not only important in the assessment phase, but throughout the design and construction period as well. The need for redundancy and collaboration is essential.

Central to the security assessment process and the development of the School Security and Safety Plan is the need to conduct an emergency response time analysis (ERTA) to determine the actual amount of time needed for a police response to a specific school in a crisis situation. This exercise will also help in appropriate design decisions related to architectural safeguards, locking technologies and locations, and other measures that could deter or delay an intruder for an amount of time necessary to ensure an onsite public safety response prior to deep building penetration. An Emergency Response Time Analysis should be conducted for each proposed school design plan to better inform local planners on which school security design features may be appropriate for impeding the entry of unwanted individuals or preventing or delaying the free movement of such parties in a school facility. (Knowing what the critical response time is can help planners build in essential design components to limit movement, isolate intruders and facilitate response efforts.)

The four major goals of the school security assessment and subsequent compliance measures are to improve:

Deterrence –to prevent unwanted visitors from gaining access to school grounds or buildings, and deterrence to avert the impact of natural threats that could result in potential harm to students, staff and property;

Detection –to quickly locate, identify and contain the movement of an unwanted party who has gained unauthorized entry to the school grounds or building;

Delay –to impede, isolate and forestall the movement of an unwanted party within a school building; to prevent access to classroom areas and common gathering points within a school allowing adequate time for a public safety response; and

Response – to ensure that coordinated, interactive and reliable communication system and procedures are in place to facilitate an immediate and effective response from public safety and medical agencies.

All the testimony confirmed the public policy assumption that schools are vulnerable facilities subject to the threat of violence and that protective school design techniques, better planning and uniform standards can make school grounds and school buildings safer places in which to conduct educational activities.

In approaching its work, the Council acknowledged several themes that would help guide or inform its decision making. These include:

The need to balance uniform school safety infrastructure standards with the needs of local communities to design and build schools that are responsive to local educational needs and objectives;
The need to preserve an educational environment for children;
The need to establish a uniform school security infrastructure assessment procedure;
The need to ensure the school building planning process is inclusive of all local decision makers, public safety, building code and fire and life safety code personnel; and
The need to establish a cooperative and constructive compliance system that facilitates attainment of the new standards.

SELECTION AND DEVELOPMENT OF A UNIFORM SCHOOL SECURITY ASSESSMENT TOOL

While the work of the SSIC is born of the events in Newtown involving a rogue shooter, other potential threats, both natural and manmade, have led the Council to consider an "all hazards" approach to school design and security standards. As a result, the Council has broadened the preventive design standards to incorporate the most up to date seismic and weather related design requirements, while also considering architectural and design deterrents to terrorists, environmental and chemical accidents or attacks.

The need to take an "all hazards approach" to the assessment of school infrastructure vulnerabilities, and the need to develop compliance requirements in school design plans that minimize identified weaknesses and better prepare schools for a host of potential threats is a major goal of the SSIC. In order to develop a uniform set of standards that are adaptable to the many varied school construction sites and types of school construction in Connecticut, there is a need to develop, or adopt, an "all hazards" threat assessment tool that not only recognizes and differentiates the unique security challenges of each facility, but also provides a comparable security analysis of common school security infrastructure characteristics that are part of all major school construction projects.

A uniform risk assessment of a school facility during the design phase of construction allows school districts to acquire a threshold level of awareness and responsiveness to potential threats and can provide a thorough evaluation of school security. A number of potential threats face every individual school facility, each having its own likelihood of occurrence (probability) and potential for injury and damage (severity). A comprehensive risk assessment includes activities to identify and quantify risk utilizing an "all-hazards" approach to threat assessment for both natural and manmade hazards, and can be used as a screening tool for a preliminary design to determine if the critical systems will enhance deterrence, detection, denial, and damage limitation (response) in the event of an emergency. The primary objective of the risk assessment is to find the most effective mitigation measure(s) to achieve a desired level of protection.

The process of security analysis or risk assessment involves four related components.

Threat Assessment – what types of Undesirable Events may a structure be prone to experience?

Consequences or Severity – a determination of the severity of harm that could impact a facility in the event of an Undesirable Event.

Vulnerabilities – an assessment of actual or planned infrastructure protective design measures against the preferred level of design security thereby identifying areas of weakness or vulnerability

Compliance – The process by which vulnerabilities are identified and remediated to the appropriate School Safety Infrastructure standards or guidelines.

While it may be necessary to extend the use of the National Clearinghouse for Educational Facilities' (NCEF) Safe School Facilities Check List (the assessment tool currently in use for the School Security Infrastructure Competitive Grant Program) for a period of time, the preferred assessment tool is the automated version of the "Integrated Rapid Visual Screening" (IRVS) program being developed by the federal DHS in consultation with the SSIC. The IRVS will be described in detail later in Appendix D of this report, but is basically comprised of three components and a compliance determination phase added by the SSIC. These include:

School Security Level – The School Security Level analysis attempts to quantify the level of risk that exists at a particular school as measured by potential casualties,

building damage, restoration costs, etc., for each of the potential high risk threats identified in the Undesirable Event Analysis. This analysis establishes a baseline school security level.

Undesirable Event Analysis – each existing school undergoing major renovation and plans for each new school will be subjected to a threat assessment based on the geographic, demographic and structural features of the school and its location. The product of this phase will be a list of school specific threats.

(The system does allow for the predetermination of the likelihood of any specific undesirable event. As a result, in Connecticut the threat assessment for a school shooting shall be considered moderate to high level in all cases).

Level of Protection Analysis – By comparing actual or planned school infrastructure elements that have been assessed against a recommended level of security for anticipated threats, specific areas of vulnerability are identified and recommendations for improvements are offered. In this area the state can establish minimal rating standards in any number of critical areas.

Compliance Determination Process – Once a local school district has completed the assessment, identified potential vulnerabilities and proposed specific plans to remediate deficiencies and secure compliance, the Office of School Facilities, Plan Review Unit will evaluate the local plan for adequacy and continue to work with local districts to ensure compliance with established standards.

While the IRVS appears to be the preferred method for the assessment of school infrastructure, it may not be fully deployed by DHS until mid 2014. As a result, the Council recommends that the Commissioner of DAS may designate the National Clearinghouse for Educational Facilities' (NCEF) Safe School Facilities Check List (currently in use in Connecticut), or another comparable program, as the initial assessment tool. A brief description of the NCEF Safe School Facilities Check List is provided in Appendix D. Subsequently the state can transition to the new IRVS program when it is available, with the benefit of a planned training and implementation period. SSIC also recommends that the Commissioner of DAS be given the authority to approve other comparable school security infrastructure assessment programs or tools, if requested to do so, and a determination of comparability is made by the Commissioner.

The assessment tool shall be used in all "new construction" or "renovate as new" projects and all school building infrastructure standards established by the SSIC should be applicable to all aspects of school construction.

If the school building plan is an "alteration" proposal, the school facility infrastructure assessment shall be conducted for the entire school with those areas subject to the planned alteration required to meet the recommended security standards resulting from the assessment.

Council members also support the creation of "waiver authority" vested in the Commissioner of DAS when unique or unanticipated conditions are determined by the Commissioner to

make compliance with established standards impractical, unreasonable or excessively expensive. Council members also believe that, due to the sensitivity of the plans, detailed school security infrastructure plans should be shielded from disclosure under the Freedom of Information Act (FOIA).

DEVELOPMENT AND APPLICATION OF STANDARDS

There are approximately 151 points of reference identified in the Level of Protection phase of the IRVS school security infrastructure program. The Council views these points of reference in three distinct groupings, which are discussed in detail in Appendix A:

1. Mandatory Compliance Areas - include aspects of critical infrastructure involving compliance with established building codes and cover seismic, flood and storm related standards. Also in this category are all provisions of the State Building Code addressing structural requirements and Life Safety Code issues that are mandatory under any condition.

2. Critical Compliance Standards – Nine primary areas of school infrastructure design, some referenced in P.A. 13-3, are identified by the Council as critical elements in school safety infrastructure design and in achieving the goal of more secure schools. Investments in protective design features in these particular areas are believed to offer the most cost effective use of limited resources with a corresponding and relatively high benefit in terms of improved security. These areas include:

1. **School Site Perimeter** - Access Control, Electronic and Natural Surveillance, Points of Entry and Accessibility, Signage, Lighting, Fencing, Bollards, Landscape

2. **Parking Areas and Vehicular and Pedestrian Routes** - Access Control, Electronic and Natural Surveillance, Points of Entry and Accessibility, Signage, Lighting, Speed Calming, Landscape, Drop Off/Pick Up Areas, Sidewalks

3. **Recreational Areas** – Playgrounds, Athletic Areas, Multipurpose Fields

4. **Communication Systems** – Mass Notification, Alarm and Information Systems, Interoperable Real Time Response Systems, Radio Systems, Wireless Systems and Multimedia Systems.

5. **School Building Exterior** – Building Perimeter, Access Control, Main Entrance/ Vestibule, Administrative Offices/Lobby, Doors, Glazing/Films, Signage, Lighting, Electronic and Natural Surveillance, Locking Systems

6. **School Building Interior** – Access Control, Electronic and Natural Surveillance, Points of Entry and Accessibility, Classrooms, Large Assembly Areas, Doors, Locking Systems, Signage

7. **Roofs** – Access Control

8. **Critical Assets/Utilities** – Access Control, Electronic and Natural Surveillance, Screens, Critical Building Components, Signage, Hardening, Redundancy, Location

9. **Other Areas** – Dumpsters, Receptacles, Hazardous Materials Storage, Signage, Locker Rooms, Rest Rooms, Specialty Areas, Courtyards

In addition to these nine Critical Compliance Standards, utilizing the "all hazards" approach to school safety, local school districts should consider having a school serve the function of emergency shelter in extreme weather conditions. Schools are typically designed for large assembly occupancy with mass care functions, such as adequate toilets, food service, etc. Multipurpose areas such as the gym or cafeteria have the capacity to accommodate a large number of people and can provide safe shelter from extreme weather conditions. If a new or renovate as new school facility is being constructed with the intent that the facility be used as an emergency shelter, the design of the designated area that is to serve as an emergency shelter should be in compliance with the ICC/NSSA Standard for the Design and Construction of Storm Shelters. ICC 500 is the national standard for compliant safe room/storm shelter in new K-12 school facilities.

3. Other Areas Subject to School Security Infrastructure Guidelines

At minimum, all school facilities are required to be compliant with state and federal building and fire codes. In other areas of school design and construction, standards and guidelines may be somewhat more variable providing local authorities with the flexibility to create an increased level of safety and security while meeting broader educational objectives. Areas not identified in the Mandatory or Critical Compliance sections noted above will be subject to more flexible guidelines to be incorporated in the School Security Technical Compliance Manual that is currently under development. Once complete this document will be incorporated in the SSIC final report as an updated and free standing Appendix E to be used by design and architectural professionals, along with Appendix A, to achieve security design objectives.

PLANS FOR ROLLOUT OF STANDARDS TO SCHOOL AND CONSTRUCTION INDUSTRY OFFICIALS

Recognizing the pervasive impact these new standards will have throughout Connecticut's educational and public safety community and construction industry, the SSIC has asked DAS to develop a comprehensive program to inform the key stake holders of the changes that are likely to take place over the next six months. As the Legislature considers implementation of the new standards, the Departments of Education, Administrative Services and Emergency Services and Public Protection will develop a broad based orientation program designed to inform interested groups and the general public.

Appendix A

INTRODUCTION

Pursuant to Public Act (PA) 13-3, Section 80 (b), the School Safety Infrastructure Council (SSIC) has been charged with developing school safety infrastructure standards for school building projects under chapter 173 of the general statutes. Such standards are to conform to industry standards for school building safety infrastructure and are to include, but are not limited to, standards regarding (1) entryways to school buildings and classrooms… (2) the use of cameras throughout the school building and at all entrances and exits, including the use of closed-circuit television monitoring… (3) penetration resistant vestibules, and (4) other security infrastructure improvements and devices as they become industry standards.

Section 80 (c) of PA 13-3 requires that the SSIC develop these standards by January 1, 2014, and annually thereafter submit these standards to the School Building Projects Advisory Council (SBPAC) and Section 83 further requires that the SBPAC incorporate such school safety infrastructure standards into the model blueprints for new school building projects and or renovate-as-new school facility projects that the SBPAC is charged with developing.

Pursuant to section 84 (b) of PA 13-3, on and after the date that the School Safety Infrastructure Council submits the school safety infrastructure standards, the decision to approve or deny an application and the determination of which expenses are eligible for reimbursement under the program shall be in accordance with the school safety infrastructure standards in effect on the date from which a complete grant application has been submitted to the Office of School Facilities (OSF) in accordance with the provisions of Chapter 173 of the Connecticut General Statutes (CGS). School Safety Infrastructure Standards apply to new and renovate as new projects.

COMPREHENSIVE APPROACH TO SCHOOL SECURITY

Introducing safety standards as part of school design requires a holistic approach to balance many objectives, such as reducing risk, creating a welcoming learning environment that is secure, facilitating proper building function, hardening of physical structures beyond the required building code, and developing security and safety planning standards to establish protocol for security management during times of crises.

Prior to the submission of a school construction grant application, a uniform risk assessment of the site and all buildings on the site for which a school facility is to be located will be required. The uniform risk assessment will give school districts the ability to determine a threshold level of awareness and responsiveness to potential threats to all hazards on, or in close proximity to, a proposed school construction project site. The "all hazards" approach

should be used as the preferred screening tool for preliminary design to allow districts the opportunity to assess its critical assets, account for its vulnerabilities to natural or manmade hazards, and to determine the most effective mitigation measure to achieve a desired level of protection. Please refer to Appendix D of the January 2014 School Safety Infrastructure Council Report for the preferred risk assessment tool for Connecticut.

Central to the security assessment process is the need to conduct an emergency response time analysis (ERTA) to determine the actual amount of time needed for a police response to a specific school in a crisis situation. This exercise will also help in appropriate design decisions related to architectural safeguards, locking technologies and locations and other measures that could deter or delay an intruder for an amount of time necessary to ensure an onsite public safety response prior to deep building penetration. An ERTA should be conducted for each proposed school design plan to better inform local planners on which school security design features may be appropriate for impeding the entry of unwanted individuals or preventing or delaying the free movement of such parties in a school facility.

Utilizing the "all hazards" approach to school safety, municipalities should work with local school districts to consider whether a school should serve the function of an emergency shelter in severe emergency conditions, such as a major storm or power outage. Schools are typically designed for large assembly occupancy with mass care functions, such as adequate toilets, showers, food service, etc. Multipurpose areas such as the gym or cafeteria have the capacity to accommodate a large number of people and can provide safe shelter from extreme conditions. If a new or renovate-as-new school facility is being constructed with the intent that the facility may serve as an emergency shelter, the design of the designated area that is to serve as an emergency shelter shall be in compliance with the ICC/NSSA Standard for the Design and Construction of Storm Shelters. ICC 500 is the national standard for compliant safe room/storm shelter in new K-12 school facilities. In addition, municipalities and school districts should consider equipping schools with auxiliary power capability, either through an installed generator or at least the wiring and outlet to install a generator (i.e., "plug-in ready").

For security infrastructure to be effective, an "all hazards" school security and safety plan must be in place prior to building occupancy to establish procedures for managing various types of emergencies. Each school employee should receive an orientation on the plan to allow school districts and municipal officials the ability to implement a unified approach to emergency planning, preparedness, and response. Pursuant to PA 13-3, Section 86, the Department of Emergency Services and Public Protection (DESPP), in consultation with the State Department of Education, has developed all hazards School Security and Safety Plan Standards together with an all hazards School Security and Safety Plan Template which is scheduled for release by January 1, 2014.

SCHOOL SAFETY DESIGN COMMITTEE

To design and develop a safe and secure school requires the input of community representatives and local officials during the design phase of construction. The SSIC recommends that a School Safety Design Committee be established for each school

construction project, during the design phase of construction. Membership of the School Safety Design Committee should include those representatives assigned to the School Security and Safety Committee as defined in the School Safety and Security Plan Standards and may include any other person the board of education deems appropriate, including, but not limited to, the school transportation manager, school resource officer, school security manager, and local emergency management director. The project design consultant team should serve as professional advisors to the School Safety Design Committee. The School Safety Design Committee should work with the school construction project design consultant team to review and assess the safety and security needs of a school facility and make recommendations on safety and security features consistent with the programmatic needs of the district.

DEVELOPING SCHOOL SAFETY INFRASTRUCTURE STANDARDS

The development of these school safety infrastructure standards is based on literature review, data analysis, expert testimony gathered from public informational meetings held by the SSIC between the months of June and September 2013, identification of best practices both within and outside the State of Connecticut, and in coordination with the Federal Department of Homeland Security (DHS) Science and Technology Directorate, Resilient Systems Division in the development of the Integrated Rapid Visual Screening (IRVS) assessment tool for the design of safe schools. For more information on the specific reference material to this report, please see Addendum 1 – School Safety Infrastructure Reference Material.

At minimum, all new and renovate as new school facilities must be compliant with Connecticut state building and fire code requirements. In addition, these School Safety Infrastructure Standards recognize critical design elements to achieve the goal of more secure schools. These critical compliance areas of school safety infrastructure design, some of which were specifically identified by P.A. 13-3, reinforce building and fire code requirements and enhance safety and security features related to school infrastructure. Critical compliance areas have been determined to be the most vulnerable to security risk and have been identified as areas that a district must address to be eligible for a school construction grant.

Critical Compliance Areas subject to School Safety Infrastructure Standards include:

1) School Site Perimeter;
2) Parking Areas and Vehicular and Pedestrian Routes;
3) Recreational Areas (playgrounds, athletic areas, multipurpose fields);
4) Communication Systems;
5) School Building Exterior;
6) School Building Interior;
7) Roofs;
8) Critical Assets/Utilities; and
9) Other Areas.

Investments in protective design features in these particular areas offer the most cost effective use of limited resources with a corresponding and relatively high benefit in terms of improved security. As such, compliance in these areas is required for grant approval. In many instances, districts may reach compliance in one of several ways, depending on the nature of the site, the project, and the district demographics.

Protective design features should include design functions that allow for natural and electronic surveillance. Natural surveillance is the use of design, including spatial definition and designation strategies, to increase the actual abilities of guardians to observe intruders, as well as to increase the perception of intruders that they may be observed by others. Electronic surveillance is the use of electronic devices for observation purposes, such as video surveillance or sound recording devices. Visual observation is greatly facilitated by appropriate lighting, which can help reduce crime opportunity by increasing the perceived risks relative to the chances of being observed and can also help reduce the fear of crime.

Technical Compliance Manual
School Safety Infrastructure Standards provide parameters for school safety and security. The type of risk assessed and the means and methods to mitigate risk will vary from school to school and district to district. A Technical Compliance Manual is being developed as an additional appendix to the Report of the School Safety Infrastructure Council and these School Safety Infrastructure Standards to provide districts with optional approaches on how to mitigate risk specific to their school utilizing recognized industry standards. The Technical Compliance Manual will provide options to mitigate risk within the parameters of these Standards and afford local officials the opportunity to make decisions, at the local level, regarding the specific needs of their school facility.

School Safety Infrastructure Standard Waiver
The local or regional board of education may apply to the Commissioner of Administrative Services for a waiver from any of the school safety infrastructure standards developed by the School Safety Infrastructure Council and the Commissioner of Administrative Services may grant such a waiver if the Commissioner determines that such compliance would be infeasible, unreasonable, or excessively expensive.

I. School Safety Infrastructure Standards

1. School Site Perimeter

The fundamental objective of site planning is to place school build¬ings, parking areas, and other necessary structures in such a way as to provide a setting that is functionally effective, as well as aestheti¬cally pleasing. Increasing concerns for security add another dimension to the range of issues that must be considered.

1.1. Crime Prevention Through Environmental Design (CPTED) is a crime prevention strategy that uses architectural design, landscape planning, security systems, and visual surveillance to create a potentially crime free environment by influencing human

behavior and should be applied when appropriate. CPTED usually involves the following principles:

1.1.1. Natural Surveillance – using physical features to preclude blind spots or hiding spots to enhance visibility and keep intruders easily observable.

1.1.2. Territorial Reinforcement – using physical barriers to express ownership over an area and to distinguish public and private areas.

1.1.3. Natural Access Control – strategic placement of points of entry/egress, fencing, landscaping and lighting to create a perception of risk to potential intruders.

1.1.4. Target Hardening – use of features that prohibit entry or accessibility.

1.2. All protective design features should include functions that allow for natural and electronic surveillance.

1.3. Fencing, landscaping, edge treatment, bollards, signage, exterior furnishings and exterior lighting may be used to establish territorial boundaries and clearly delineate areas of public, semi-public, semi-private, and private space.

ACCESS CONTROL

The following minimum standards shall be met:

1.4. School boundaries and property lines shall be clearly demarcated to control access to a school facility and shall clearly delineate areas of public, semi-public, semi-private, and private space.

1.5. Where a school is a shared use facility that serves the community, internal boundaries shall be clearly defined to establish a distinct perimeter for both the school and the shared use facilities with separate and secure access points that are clearly defined. Boundaries may be defined by installing fencing, signage, edge treatment, landscaping, and ground surface treatment.

1.6. Bollards shall be kept clear of ADA access ramps and the corner quadrants of streets (A bollard is a post or set of posts used to delimit an area or to exclude vehicles).

1.7. The number of vehicle and pedestrian access points to school property shall be kept to a minimum and shall be clearly designated as such.

1.8. Directional signage shall be installed at primary points of entry to control pedestrian and vehicular access and to clearly delineate vehicular and pedestrian traffic routes. Signage should be simple and have the necessary level of clarity. Signage should have reflective or lighted markings.

The following shall be considered during the design phase of a school construction project to provide optimal safety and security:

1.9. Fencing, if installed, around the perimeter of the school property shall not permit footholds, where feasible, to deter unauthorized access to a school facility.

1.10. Fencing, if installed, shall be free of any vegetation. Remove bushes, trees, containers, or any other object that might provide a hiding place from the proximity of the fence.

1.11. Bollards, if installed, should not be less than twenty six (26) inches in height and shall never exceed a height of forty eight (48) inches to allow for an unobstructed view.

1.12. Do not use planters in high pedestrian traffic areas.

1.13. Secure manholes, utility tunnels, culverts, and similar unintended access points to the school property with locks, gates, or other appropriate devices without creating additional entrapment hazards.

SURVEILLANCE

The following minimum standards shall be met:

1.14. Unsupervised site entrances shall be secured during low use times for access control purposes.

1.15. Perimeter fencing, landscaping and signage shall not obstruct the view of natural and/or electronic surveillance.

1.16. Landscaping shall provide an unobstructed view for natural and/or electronic surveillance.

1.17. The design shall allow for the monitoring of points of entry/egress by natural and/or electronic surveillance during normal hours of operation and during special events.

1.18. At minimum, electronic surveillance shall be used at the primary access points to the site for both pedestrian and vehicular traffic.

1.19. All points of entry/egress shall be adequately illuminated to enhance visibility for purposes of surveillance.

1.20. Designated pedestrian and vehicular traffic routes shall be adequately illuminated to reinforce natural and or electronic surveillance during evening hours.

The following shall be considered during the design phase of a school construction project to provide optimal safety and security:

1.21. Avoid blocking lines of sight with fencing, signage, and landscaping.

1.22. Avoid dense vegetation in close proximity to a school building, where someone could hide undetected.

1.23. Locate access points in areas of high visibility that can be easily observed and monitored by staff and students in the course of their normal activities. Natural surveillance may be maximized by controlling access points that clearly demarcate boundaries and spaces.

1.24. Video surveillance systems may be used around the site perimeter to provide views of points of entry/egress and as a means to securely monitor an area when natural surveillance is not available.

1.25. Surveillance equipment, where installed, shall be mounted to resist forces in any direction. Surveillance equipment should be designed to be vandal resistant and protect against natural hazards.

1.26. Lighting should be sufficient to illuminate potential areas of concealment, enhance observation, and to provide for the safety of individuals moving between adjacent parking areas, streets and around the school facility.

1.27. Video surveillance systems, where installed, shall have adequate illumination levels to produce a useable image.

2. Parking Areas and Vehicular and Pedestrian Routes

The following minimum standards shall be met:

2.1. Points of entry/egress shall allow for natural and/or electronic surveillance during normal hours of operation and during special events.

2.2. At the minimum, electronic surveillance shall be used at the primary access points to the site for both pedestrian and vehicular traffic.

2.3. Designated pedestrian and vehicular points of entry/egress and traffic routes shall be adequately illuminated to reinforce natural and or electronic surveillance.

2.4. Signage shall be posted at all vehicular access points with rules as to who is allowed to use parking facilities and when they are allowed to do so. Signage should be simple and have the necessary level of clarity. Signage should have reflective or lighted markings.

2.5. Unmanned points of entry that are otherwise secured shall be made accessible for emergency vehicles.

2.6. Parking areas shall be adequately illuminated with vandal resistant lighting.

2.7. Parking shall be prohibited under or within the school building.

2.8. Adequate lighting shall be provided at site entry locations, roadways, parking lots, and walkways from parking to buildings.

2.9. Fire lanes around the building shall be closed off from traffic with "break-away" bollards.

2.10. Landscaping shall be designed to provide an unobstructed view for natural and/or electronic surveillance.

The following shall be considered during the design phase of a school construction project to provide optimal safety and security:

2.11. External access to school facilities shall be kept to a limited number of controlled entrances. Vehicular circulation routes shall be separated and kept to a minimum of two routes per project site for purposes of separating service and delivery areas from visitors' entry, bus drop-off, student parking and staff parking. Circulation routes shall be separated, clearly demarcated, and easily supervised.

2.12. Where distance from the building to the nearest curb provides a setback of less than twenty (20) feet, parking shall be restricted in the curb lane.

2.13. A drop-off/pick-up lane shall be designated for buses only with a dedicated loading and unloading zone designed to adequately allow for natural and/or electronic surveillance and to avoid overcrowding and accidents.

2.14. Pedestrian routes from drop off areas shall be a minimum width of five (5) feet to accommodate pedestrian traffic during peak periods of use.

2.15. Separate shipping and receiving areas from all utility rooms by a minimum of fifty (50) feet, unless prohibited by site constraints. If a site is determined to be physically constrained from reasonably meeting the fifty (50) foot separation requirement, the district shall maximize the separation distance to the greatest extent possible. Measure the utility designation boundary from the outer most perimeters of the shipping and receiving area to the outer most perimeter of the utility room. Utility rooms and service areas include electrical, telephone, data, fire alarm, fire suppression, and mechanical rooms.

2.16. Design entry roads so that vehicles do not have a straight-line approach to the main

building. Use speed-calming features to keep vehicles from gaining enough speed to penetrate barriers. Speed-calming features may include, but are not limited to, speed bumps, safety islands, differing pavement surfaces, landscape buffers, exterior furnishings and light fixtures.

2.17. Secure unsupervised site entrances during low use times for access control.

2.18. Sign text should prevent confusion over site circulation, parking, and entrance location. Unless otherwise required, signs should not identify sensitive or high risk areas. However, signs should be erected to indicate areas of restricted admittance.

2.19. Parking areas should be designed in locations that promote natural surveillance. Parking should be located within view of the occupied building, while maintaining the maximum stand-off distance possible.

2.20. Locate visitor parking in areas that provide the fewest security risks to school personnel. The distance at which a potentially threatening vehicle can park in relation to school grounds and buildings should be controlled.

2.21. Keep the number of driveways or parking lots that students will have to cross to get into the school building to a minimum.

2.22. Consider illuminating areas where recreational activities and other nontraditional uses of the building occur. If video surveillance systems are installed, adequate illumination shall be designed to accommodate it.

2.23. Consider blue light emergency phones with a duress alarm in all parking areas. If utilized, blue light emergency phones shall be clearly visible, readily accessible and adequately illuminated to accommodate electronic surveillance.

3. Recreational Areas – Playgrounds, Athletic Areas, Multipurpose Fields

The following minimum standards shall be met:

3.1. The design shall allow for ground level, unobstructed views, for natural and/or electronic surveillance of all outdoor athletic areas, playgrounds and recreation areas at all times.

3.2. Playground equipment shall be compliant with life safety, building, ADA and other federal, state and local building code requirements. Prior to installing playground equipment refer to the local authority having jurisdiction for compliance with state building code.

3.3. Pre-kindergarten and kindergarten play areas shall be separated from play areas designed for other students.

3.4. Athletic areas and multipurpose fields at elementary school buildings shall contain a physical protective barrier to control access and protect the area.

The following shall be considered during the design phase of a school construction project to provide optimal safety and security:

3.5. Playgrounds and other student gathering areas shall be located away from public vehicle access areas, such as streets or parking lots by a minimum of fifty (50) feet unless prohibited by site constraints. If a site is determined to be physically constrained from reasonably meeting the fifty (50) foot separation requirement, maximize the separation distance between the vehicle access area and student gathering area to the greatest extent possible. Measure the student gathering boundary area from the outer most perimeter of the playground or other public gathering area and the outer most perimeter of the public vehicle access area or parking lot.

3.6. Consider a physical protective barrier around athletic areas and multipurpose fields at secondary school buildings to control access and protect the area.

3.7. Locate access points to recreational areas in areas of high visibility that can be easily observed and monitored by staff and students in the course of their normal activities. Natural surveillance may be maximized by controlling access points that clearly demarcate boundaries and spaces.

3.8. Installing fences internal to the site perimeter around pre-kindergarten and kindergarten play areas may maximize security. If fencing is installed around a pre-kindergarten and kindergarten play area, it shall be a minimum of four (4) feet in height and have a minimum clearance of six (6) feet horizontally in all directions from the play equipment. Emergency /Pedestrian access gate(s) with approved egress hardware shall be installed in fencing enclosing pre-k and kindergarten play areas.

4. Communication Systems

The following minimum standards shall be met:

4.1. All classrooms shall have two way communications with the administrative office.

4.2. All communication systems shall be installed in compliance with Connecticut state building and fire code requirements.

4.3. Emergency Communication Systems (ECS) and/or alarm systems shall have

redundant means to notify first responders, supporting agencies, public safety officials and others of an event to allow for effective response and incident management. Alarm systems must be compatible with the municipal systems in place. These systems may include radio, electronic, wireless or multimedia technology which provides real time information (such as audio, visual, mapping and relevant data) directly to first responders.

4.4. Emergency Communication Systems (ECS) shall be installed and maintained in accordance with NFPA 72, 2010, or the most current fire code standard adopted by the State of Connecticut. ECS may include but is not limited to public address (PA) systems, intercoms, loudspeakers, sirens, strobes, SMS text alert systems, and other emerging interoperable resource sharing communication platforms.

4.5. All new buildings shall have approved radio coverage for first responders within the building based upon the existing coverage levels of communication systems at the exterior of the building. The system as installed must comply with all applicable sections of the Federal Communication Commission (FCC) Rules for Communication Systems and shall coordinate with the downlink and uplink pass band frequencies of the respective first responders.

4.6. All in-building radio systems shall be compatible with systems used by local first responders at the time of installation.

4.7. Discrete alarm systems wiring shall not be concentrated, nor mounted in a shared pathway.

The following shall be considered during the design phase of a school construction project to provide optimal safety and security:

4.8. Consider operational procedures in coordination with security standards that include emergency notifications for immediate threat and the testing of emergency response procedures.

4.9. Consider a communication strategy in coordination with security standards that include the distribution of a radio or wireless communication system to appropriate personnel, with necessary equipment, for utilization in case of emergency.

4.10. If radio communication systems are used, radios shall be capable of operating on frequencies reserved by the Federal Communications Commission (FCC) for school districts.

4.11. Provide radio system and signal booster supervisory signals for equipment malfunction and signal booster failure. Power supply supervisory signals should include loss of normal AC power, failure of battery charger, and low battery capacity (alarming at 70 percent of battery capacity).

4.12 Call buttons with direct intercom communication to the central administrative office and/or security office should be installed at key public contact areas.

5. School Building Exterior – Points of Entry/Egress and Accessibility

SCHOOL BUILDING EXTERIOR

The following minimum standards shall be met:

5.1. Points of entry/egress shall be designed to allow for monitoring by natural and/or electronic surveillance during normal hours of operation and during special events.

5.2. At minimum electronic surveillance shall be used at the primary points of entry.

5.3. Identification signage shall be placed at all public points of entry/egress to the school. Signage should be simple and have the necessary level of clarity. Signage shall have a good color contrast.

5.4. Lighting shall be sufficient to adequately illuminate potential areas of concealment, enhance natural and/or electronic surveillance, and discourage vandalism.

5.5. Emergency egress lighting, as required by Connecticut state building and fire code, shall be available for safe evacuation and to reduce the risk of panic related injuries.

The following shall be considered during the design phase of a school construction project to provide optimal safety and security:

5.6. Trees shall be a minimum of ten (10) feet from the building to prevent window or roof access to the school facility.

5.7. Avoid dense vegetation and street furniture in close proximity to a school building, where it could screen activity.

5.8. Consider blue light emergency phones with a duress alarm along the building perimeter as needed to enhance security. If utilized, blue light emergency phones shall be clearly visible, readily accessible and adequately illuminated to accommodate electronic surveillance.

MAIN ENTRANCE/ADMINISTRATIVE OFFICES/LOBBY

The following minimum standards shall be met:

5.9. Main entrances shall be well lit and unobstructed to allow for natural and/or electronic surveillance at all times.

5.10. The design shall allow for visitors to be guided to a single control point for entry.

5.11. The main entrance assembly (glazing, frame, & door) shall be bullet resistant and blast resistant.

5.12. Plans shall carefully address the extent to which glazing is used in primary entry ways, areas of high risk and areas of high traffic and the degree to which glazing is installed or treated to be bullet, blast, or shatter resistant to enhance the level of security. The district's priorities for the use of natural surveillance, electronic surveillance, natural light and other related security measures may affect this decision and the overall level of security.

5.13. Main entrance doors shall be controllable from a central location, such as the central administrative office and/or the school security office.

5.14. Video surveillance cameras shall be installed in such a manner to show who enters and leaves the building.

5.15. The design shall allow for providing visitor accessibility only after proper identification.

5.16. Door hardware, handles, locks and thresholds shall be ANSI/BHMA Grade 1.

5.17. Main entrance door hinge pins and critical interior doors must be tamper proof.

The following shall be considered during the design phase of a school construction project to provide optimal safety and security:

5.18. The central administrative offices and/or security offices should have an unobstructed view of the main entrance lobby doors and perpendicular hallways. If feasible, administrative offices abutting the main entrance should be on an exterior wall with windows for natural surveillance of visitor parking, drop off areas, and exterior routes leading to the main entrance.

5.19. Walls should be hardened in foyers and public entries. Interior and exterior doors should be offset from each other in airlock.

5.20. Use vestibules to increase security. The entrance vestibule shall have both interior and exterior doors that are lockable and controllable from a remote location.

5.21. Post warning signs about trespassing and illicit behavior, citing applicable laws and regulations at primary and secondary points of entry.

5.22. When possible, the design should force visitors to pass directly through a screening area prior to entering or leaving the school. The screening area should be an

entrance vestibule, the administration/reception area, a lobby check in station, an entry kiosk, or some other controlled area. This controlled entrance should serve as the primary control point between the main entrance and all other areas of the school.

5.23. Control visitor access through electronic surveillance with intercom audio and remote lock release capability at the visitor entrance.

5.24. Restrict visitor access during normal hours of operation to the primary entrance. If school buildings require multiple entry points, regulate those entry points with no access to people without proper authorization. Consider an electronic access control system for authorized persons if multiple entry points are utilized during normal hours of operation.

5.25. Other educational office space that may service the community at large should be in close proximity to the main entrance.

5.26. Install a panic/duress alarm or call button at an administrative/security desk as a protective measure.

5.27. Proximity cards, keys, key fob, coded entries, or other devices may be used for access control of students and staff during normal hours of operation. The system may be local (residing in the door hardware) or global (building or district-wide). Prior to installing a customized door access control system refer to the local authority having jurisdiction for compliance with state building and fire code.

5.28. Magnetic locks, if installed, shall meet the current Connecticut state building and fire code requirements for school facilities. Prior to installing magnetic locks at a school facility, refer to the local authority having jurisdiction for compliance with Connecticut state building and fire code.

5.29. Electric strikes, if installed, shall meet the Underwriters Laboratory (UL) standard 1034 for Burglary Resistant Electric Locking Mechanisms.

5.30. Consider sensors that alert administrative offices when exterior doors at all primary and secondary points of entry are left open.

5.31. Consider radio frequency access control devices at primary points of entry to allow rapid entry by emergency responders.

EXTERIOR DOORS

The following minimum standards shall be met:

5.32. The design shall allow for the points of entry/egress to be monitored by natural and/or electronic surveillance during normal hours of operation and during special events.

5.33. Identification signage shall be placed at all public points of entry/egress to the school. Signage should be simple and have the necessary level of clarity. Signage shall have a good color contrast.

5.34. Lighting shall be sufficient to illuminate potential areas of concealment, enhance natural and/or electronic surveillance, discourage and protect against vandalism.

5.35. All doors that serve as a means of egress shall meet life safety and fire code for emergency evacuation.

5.36. All exit doors shall be equipped with panic exit hardware listed to UL 305, and not locked or secured by any other means and under no circumstances chained shut.

5.37. Tertiary exterior doors shall be hardened to be penetration resistant and burglar resistant.

5.38. All exterior doors shall be equipped with hardware capable of implementing a full perimeter lockdown by manual or electronic means.

5.39. All exterior doors shall be easy to lock and allow for quick release in the event of an emergency.

5.40. All exterior doors with interior locks shall have the capability of being unlocked/released from the interior with one motion.

5.41. Door hardware, handles, locks and thresholds shall be ANSI/BHMA Grade 1.

5.42. Exterior door hinge pins and critical interior doors must be tamper proof.

5.43. All exterior doors that allow access to the interior of the school shall be numbered in sequential order in a clockwise manner starting with the main entrance. All numbers shall be visible from the street or closest point of entry/egress, contrast with its background and be retro-reflective.

The following shall be considered during the design phase of a school construction project to provide optimal safety and security:

5.44. Doors that do not allow access to the building should not be numbered, so that first responders can readily identify access doors. Examples of these may be trash rooms or storage rooms.

5.45. Permit entry and egress during normal hours of operation through a limited number of doors.

5.46. Doors vulnerable to unauthorized access may be monitored by adding door contacts or sensors, or may be secured through the use of other protective measures, such as delayed opening devices, or video surveillance cameras that are available for viewing from a central location, such as the central administrative office and/or security office.

5.47. Install latch guards at exterior door latches to prevent levering.

5.48. Proximity cards, keys, key fob, coded entries, or other devices may be used for access control of students and staff during normal hours of operation. The system may be local (residing in the door hardware) or global (building or district-wide). Prior to installing a customized door access control system consult with your local building and fire official to ensure compliance with state building and fire code.

5.49. Magnetic locks, if installed, shall meet the current Connecticut State building and fire code requirements for school facilities. Prior to installing magnetic locks at a school facility, refer to the local authority having jurisdiction for compliance with Connecticut state building and fire code.

5.50. Electric strikes, if installed, shall meet the Underwriters Laboratory (UL) standard 1034 for Burglary Resistant Electric Locking Mechanisms.

EXTERIOR WINDOWS/GLAZING/FILMS

Walls generally provide greater protection from natural and manmade hazards than windows. Windows should be as resistant as possible to mitigate natural and manmade hazards, while at the same time meeting standards for high performance, allowing for natural surveillance, and providing students and personnel the ability to communicate with outside responders in the event of an emergency. To maximize natural lighting in first-floor classrooms without wall protection, a district may also consider utilizing ballistic glass or treated glass that is blast resistant and shatter resistant to enhance the level of security and still maximize lighting efficiencies. If windows are favored over wall protection, consider additional framing with increased strength (i.e. steel).

The following minimum standards shall be met:

5.51. Windows may serve as a secondary means of egress in case of emergency. Any "rescue window" with a window latching device shall be capable of being operated from not more than forty eight (48) inches above the finished floor.

5.52. Each classroom having exterior windows shall have the classroom number affixed to the upper right hand corner of the first and last window of the corresponding classroom. The numbers shall be reflective, with contrasting background and shall be readable from the ground plain at a minimum distance of fifty (50) feet.

5.53. Plans shall carefully address the extent to which glazing is used in primary entry ways, areas of high risk and areas of high traffic and the degree to which glazing is installed or treated to be bullet, blast, or shatter resistant to enhance the level of security. The district's priorities for the use of natural surveillance, electronic surveillance, natural light and other related security measures may affect this decision and the overall level of security.

The following shall be considered during the design phase of a school construction project to provide optimal safety and security:

5.54. Set first floor exterior windows at the maximum height allowed per fire code regulations for the window to serve as a "rescue window" or secondary means of egress. This will maximize wall protection and minimize the ability for an intruder to enter the building through a window.

5.55. Design windows, framing and anchoring systems to be shatter resistant, bullet resistant, burglar resistant, and forced entry resistant, especially in areas of high risk.

5.56. Resistance for glazing may be built into the window or applied with a film.

5.57. Classroom windows should be operable to allow for evacuation in an emergency.

6. School Building Interior

Interior physical security measures are a valuable part of a school's overall physical security infrastructure. Some physical measures such as doors, locks, and windows deter, prevent or delay an intruder from freely moving throughout a school and from entering areas where students and personnel may be located. Natural and electronic surveillance can assist in locating and identifying a threat and minimizing the time it takes for first responders to neutralize a threat.

The following minimum standards shall be met:

6.1. The design shall provide for controlled access to classrooms and other areas in the interior that are predominantly used by students during normal hours of operation to protect against intruders.

6.2. Emergency egress lighting, as required by the State of Connecticut building and fire code, shall be available for safe evacuation and to reduce the risk of panic related injuries.

6.3. Placement of interior signage shall be such that no point in an exit access corridor is in excess of the rated viewing distance, as defined by State of Connecticut building and fire code, from the nearest sign.

6.4. All interior room numbers shall be coordinated in a uniform room numbering system format. Numbering shall be in sequential order in a clockwise manner starting with the interior door closest to the main point of entry. Interior room number signage shall be wall mounted. Additional room number signage may be ceiling or flag mounted. Interior room number signage specifications and installation shall be in compliance with ADA standards and other applicable regulations as required.

The following shall be considered during the design phase of a school construction project to provide optimal safety and security:

6.5. Establish separate entrance and exit patterns for areas that have concentrated high-volume use, such as cafeterias and corridors, to reduce time required for movement into and out of spaces and to reduce the opportunity for personal conflict. Separation of student traffic flow can help define orderly movement and save time, and an unauthorized user will perceive a greater risk of detection.

6.6. Consider intruder doors that automatically lock when an intruder alarm or lockdown is activated to limit intruder accessibility within the building. If installed, intruder doors shall automatically release in the event of an emergency or power outage and must be equipped with a means for law enforcement and other first responders to open as necessary.

INTERIOR SURVEILLANCE

The following minimum standards shall be met:

6.7. An intrusion detection system shall be installed in all school facilities.

6.8. If video surveillance systems are utilized, the surveillance system shall be available for viewing from a central location, such as the central administrative office and/or the school security office.

The following shall be considered during the design phase of a school construction project to provide optimal safety and security:

6.9. Consider electronic surveillance in lobbies, corridors, hallways, large assembly areas, stairwells or other areas as a means to securely monitor those areas when natural surveillance is not available. Prior to installing electronic surveillance systems in these areas check with your local building and fire official to ensure compliance with State of Connecticut building and fire codes.

6.10. The design of a school facility should allow for the designation of controlled hiding spaces. A controlled hiding place should create a safe place for students and personnel to hide and protect themselves in the event of an emergency. The controlled hiding space should be lockable and readily accessible. A controlled hiding space could be a classroom or some other designated area within the building.

CLASSROOM SECURITY

The following minimum standards shall be met:

6.11. All classrooms shall be equipped with a communications system to alert administrators in case of emergency. Such communication systems may consist of a push-to-talk button system, an identifiable telephone system, or other means.

6.12. Door hardware, handles, locks and thresholds shall be ANSI/BHMA Grade 1.

6.13. All classroom doors shall be lockable and door locks shall be tamper resistant.

6.14. Door hardware shall allow staff to quickly lock rooms from the inside without stepping into the hallway.

6.15. Classroom door locks shall be easy to lock and allow for quick release in the event of an emergency.

6.16. Classroom doors with interior locks shall have the capability of being unlocked/released from the interior with one motion.

6.17. All door locking systems must comply with life safety and State of Connecticut building and fire codes to allow emergency evacuation.

The following shall be considered during the design phase of a school construction project to provide optimal safety and security:

6.18. Doorways should not be recessed.

6.19. Optimally, doors in main corridors should swing a full 180 degrees to provide an unobstructed line of site in case of emergency.

6.20. If classroom doors are equipped with a sidelight, the glazing should be penetration resistant.

6.21. If interior windows are installed to provide lines of site into/out of classrooms or other populated areas, certain factors should be taken into consideration relating to the size, placement and material used for those windows, including:

6.21.1. Minimizing the size of windows or the installation of multiple interspersed smaller windows with barriers in a larger window area to deter intruder accessibility.

6.21.2. Placing windows at a sufficient distance from the interior locking mechanism to prevent or make difficult the opening of a door or lock from outside.

6.21.3. Concealing or obstructing window views to prevent an assailant's ability to ascertain the status or presence of persons inside of a classroom during lockdown.

6.21.4. Hardening window frames to lessen window vulnerability.

LARGE ASSEMBLY AREAS **(gym, auditorium, cafeteria, or other areas of large assembly)**

The following minimum standards shall be met:

6.22. Points of entrance and egress shall be clearly demarcated.

6.23. The design shall allow for the monitoring of points of entry/egress by natural and/or electronic surveillance during normal hours of operation and during special events.

6.24. Signage shall be placed at all public points of entry/egress to the assembly area. Signage should be simple, have the necessary level of clarity, and a good color contrast.

6.25. Seating and circulation layouts shall be adequate to allow for emergency exit.

6.26. Lighting shall be sufficient to illuminate potential areas of concealment, enhance natural and/or electronic surveillance, discourage vandalism and protect against vandalism.

6.27. Emergency egress lighting shall be available for safe evacuation and to reduce the risk of panic related injuries. All emergency lighting shall have adequate backup.

The following shall be considered during the design phase of a school construction project to provide optimal safety and security:

6.28. The main entrance to a large assembly area should be unobstructed to allow for natural surveillance.

6.29. Electronic surveillance should be used in large assembly areas and at all exit doors to securely monitor those areas when natural surveillance is not available.

6.30. Clear lines of site should be established for easy traffic flow.

6.31. A secure and lockable storage area should be provided for storage and equipment.

Shared Space or Mixed Occupancy (Library, BOE, Mixed Use or Other Community Service)

In certain circumstances a municipality or school district may choose to share space on a school site to support other educational or community service activities, such as board of education office space, municipal government office space, recreational space, health and family service or some other use that supports the educational theme of the school, or some other use that provides a needed service to the community. All buildings located within the property line of a school facility must be included as part of the uniform risk assessment which is to be completed prior to the submission of a school construction grant application. A shared use may require enhanced levels of security that are not reimbursable under the school construction grant program.

The following minimum standards shall be met:

6.32. Shared space shall have separate, secure and controllable entrances.

6.33. The design of shared space should prevent unauthorized access to the rest of the school.

6.34. The design of shared space shall allow for the monitoring of points of entry/egress by natural and/or electronic surveillance during normal hours of operation.

6.35. Signage should be simple and clearly define the intended use and occupancy of the space. Signage shall clearly demarcate all public points of entry and egress.

6.36. Locate parking for shared space in areas that provide the fewest security risks to school personnel and students. The distance at which a potentially threatening vehicle can park in relation to school grounds and buildings should be controlled.

7. Roofs

The following minimum standards shall be met:

7.1. The design shall allow for roof accessibility to authorized personnel only.

The following shall be considered during the design phase of a school construction project to provide optimal safety and security:

7.2. Access to the roof should be internal to the building. Roof access hatches shall be locked from the inside.

7.3. If external access exists, roof ladders should be removable, retractable, or lockable. Screen walls around equipment or service yards should not provide easy access to the roof or upper windows.

8. Critical Assets/Utilities

The following minimum standards shall be met:

8.1. Screens at utilities, such as transformers, gas meters, generators, trash dumpsters, or other equipment shall be designed to minimize concealment opportunities. Installation of screens at utilities shall be compliant with utility company requirements.

8.2. Access to building operations systems shall be restricted to designated users. Secure all mechanical rooms with intruder detection sensors.

8.3. Loading docks shall be designed to keep vehicles from driving into or parking under the facility.

8.4. Life safety equipment shall automatically be connected to a backup power supply to provide service if the main power supply is disrupted in case of emergency. The backup power supply for life safety equipment shall be maintained in accordance with NFPA 72, 2010, or the most current fire code standard adopted by the State of Connecticut.

The following shall be considered during the design phase of a school construction project to provide optimal safety and security:

8.5. Shipping and receiving areas shall be separated from all utility rooms by at least fifty (50) feet unless prohibited by site constraints. If a site is determined to be physically constrained from reasonably meeting the fifty (50) foot separation requirement, maximize the separation distance between the receiving area and the utility room to the greatest extent possible. Utility rooms and service areas include electrical, telephone, data, fire alarm, fire suppression rooms, and mechanical rooms.

8.6. Critical building components should be located away from vulnerable areas. Critical building components may include, but are not limited to:

- Emergency generator;
- Normal fuel storage;
- Main switchgear;
- Telephone distribution;
- Fire pumps;
- Building control centers;
- Main ventilation systems if critical to building operation.
- Elevator machinery and controls.
- Shafts for stairs, elevators, and utilities.

8.7. Critical building components should be a minimum of fifty (50) feet away from loading docks, front entrances, and parking areas unless prohibited by site constraints. If a site is determined to be physically constrained from reasonably meeting the fifty (50) foot separation requirement, maximize the separation distance to the greatest extent possible.

8.8. Emergency and normal electrical equipment should not be placed in the same electrical room.

8.9. Emergency generation systems shall be sized to include backup of life safety and communication systems.

8.10. Enclose exterior equipment in an area that is lockable and protected with bollards when located adjacent to vehicular routes.

8.11 Loading zones should be separate from public parking.

8.12 Installation of empty conduits for future security control equipment shall be considered during construction or major renovation.

9. Other Security Infrastructure and Design Strategies

The following minimum standards shall be met:

9.1 The design shall include special rooms for hazardous supplies that can be locked.

The following shall be considered during the design phase of a school construction project to provide optimal safety and security:

9.2 Egress stairwells should be located remotely and should not discharge into lobbies, parking or loading areas.

9.3 Enclose dumpsters in a designated service area or surrounded on three sides by a high wall, and a securable gate. Dumpsters should not provide access to the roof.

9.4 Trash receptacles, dumpsters, mailboxes and other large containers shall be kept at least thirty (30) feet from the building unless prohibited by site constraints. If a site is determined to be physically constrained from reasonably meeting the thirty (30) foot separation requirement, maximize the separation distance to the greatest extent possible.

SCHOOL SAFETY INFRASTRUCTURE STANDARD WAIVER

The local or regional board of education may apply to the Commissioner of Administrative Services for a waiver from any of the school safety infrastructure standards developed by the School Safety Infrastructure Council and the Commissioner of Administrative Services may grant such a waiver if the Commissioner determines that such compliance would be technically infeasible, unreasonable, or excessively expensive.

OTHER AREAS OF CONSIDERATION

Not all areas within and around a school facility have been specifically identified as part of the School Safety Infrastructure Standards, but nonetheless are important to ensuring a secure facility and should be carefully scrutinized for purposes of safety and security during the design phase of construction. Other areas may include, but are not limited to:

- Courtyards;
- Specialty Areas (art, music, science, computer);
- Rest Rooms;
- Locker Rooms; and
- Corridors/Hallways.

At minimum, all school facilities are required to be compliant with state and federal building and fire codes. In other areas of school design and construction, standards and guidelines may be somewhat more variable providing local authorities with the flexibility to create an increased level of safety and security while meeting broader educational objectives. School Security Technical Compliance Guidelines are currently being developed to provide design and architectural professionals with options on how to achieve a district's security objectives. The School Security Technical Compliance Guidelines will be a free standing appendix to the School Safety Infrastructure Report (see Appendix E, School Security Technical Compliance Guidelines).

Addendum 1 – School Safety Infrastructure Reference Material

Several design philosophies and techniques have been incorporat¬ed into this primer, including

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http://www.campussafetymagazine.com/Channel/School-Safety/Articles/2012/12/16-Steps-to--Better-School-Front-Entrance-Security.aspx

NSSSS, School Access and Visitor Control. National School Safety and Security Services, March 2013. http://www.schoolsecurity.org/resources/school_access_control.html

FLDOE, Florida Safe School Design Guidelines: Strategies to Enhance Security and Reduce Vandalism. Florida Department of Education, 2003.
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Appendix B

SCHOOL SAFETY INFRASTRUCTURE COUNCIL – MEMBERSHIP & STAFF

As instructed by Public Act 13-3, the School Safety Infrastructure Council (SSIC) is comprised of nine members: the Commissioners of the Departments of Administrative Services, Education and Emergency Services and Public Protection or their designees and six members with varying expertise in school security related fields, appointed by legislative leaders.

Members

CHAIR

Commissioner Donald J. DeFronzo
Connecticut State Department of Administrative Services (DAS), Hartford, CT
Representing a commissioner or designee

Bio: Mr. DeFronzo is the Commissioner of the Connecticut Department of Administrative Services, and is the Chair of the School Safety Infrastructure Council. He has spent his entire career in public service, including serving as state senator from the sixth district and as mayor of New Britain. While in the legislature, he was chair of the Transportation Committee and the Government Administration & Elections Committee, and sat on the Finance, Revenue & Bonding and Environment Committees.

Members

Deputy Commissioner William P. Shea
Connecticut State Department of Emergency Services and Public Protection (DESPP), Middletown, CT
Appointed by DESPP Commissioner Reuben F. Bradford; representing a commissioner or designee

Bio: Mr. Shea is the Deputy Commissioner, Department of Emergency Services and Public Protection, where he is responsible for directing the department's Division of Emergency Management and Homeland Security. A retired US Army Colonel with more than 32 years of service, Mr. Shea also serves as a member of the School Security and Safety Planning Workgroup the School Safety Infrastructure Council and Homeland Security Advisor to the Governor.

Commissioner Stefan Pryor
Connecticut State Department of Education (SDE), Hartford, CT
Representing a commissioner or designee

Bio: Mr. Pryor is the Commissioner of the Connecticut Department of Education. Mr. Pryor previously served as deputy mayor for economic development in Newark, N.J.; as a leader of the Lower Manhattan Development Corporation, which was created in the aftermath of September 11, 2001; and as the vice president for education at the Partnership for New York City, where he led the organization's public education efforts and served as executive director of its main school reform program.

John Woodmansee, CIH, CUSA
Education Consultant - Environmental Health and Safety
Connecticut Department of Education (SDE) CT Technical High School System
Appointed by SDE Commissioner Stefan Pryor; representing a commissioner or designee

Bio: Mr. Woodmansee has more than 22 years of experience in the safety field, working in educational institutions, general industry and construction environments. He is the Education Consultant for Security, Environmental, Health & Safety for the Department of Education and is a member of the School Security and Safety Planning Workgroup. Mr. Woodmansee was also the Supervisor of Nuclear Site Safety for Dominion Nuclear Connecticut, and a senior environmental consultant.

Richard E. Morris
Director of Public Safety and Emergency Management, Town of East Lyme
Appointed by President Pro Tempore Donald E. Williams, Jr.; representing an expert in building security

Bio: Mr. Morris is the Fire Marshal and Director of Public Safety and Emergency Management for the Town of East Lyme. Mr. Morris is a member and past chair of the NFPA 303 Marinas and Boatyards Committee, a member of the NFPA 1033 Qualifications for Fire Investigators Committee, Past President of the Connecticut Fire Marshall's Association (CFMA), and the current Vice President of IAAI Connecticut Chapter.

Frank J. Costello, Jr, P.E.
Structural Engineer, Hamden, CT
Appointed by Speaker of the House J. Brendan Sharkey; representing a licensed professional engineer who is a structural engineer

Bio: Mr. Costello is a member of the American Institute of Steel Construction and the Structural Engineers Coalition of Connecticut. Throughout his 33 year career, he has acquired extensive experience designing various schools throughout the state, including the University of Connecticut, Southern Connecticut State University, Fairchild Wheeler Multi-Magnet School, Plainfield High School, Barnum Elementary School, Thomas Edison Middle School and many others.

Ronald Jakubowski
Former Asst. Superintendent of Schools for Operations and Facilities, New Britain, CT
Appointed by Senate Majority Leader Martin M. Looney; representing a certified public school administrator

Bio: Mr. Jakubowski is a recently retired educator with more than 39 years of experience in public education. His experience includes that of a teacher, principal, and Assistant Superintendent and Acting Superintendent of New Britain schools.

Steven Waznia
Firefighter, Berlin, CT
Appointed by House Majority Leader Joe Aresimowicz; representing a firefighter, emergency medical technician or paramedic

Bio: Mr. Waznia currently serves as Fire Marshal and Director of Risk Management for the Town of Berlin. He has more than 32 years of experience in the public safety field including fire suppression, investigation, code enforcement and development, hazardous materials and risk management.

Adam Byington
Police Officer, Fairfield, CT
Appointed by Senate Minority Leader John McKinney; representing a school resource officer (police officer assigned to a school)

Bio: Mr. Byington is a Police Officer in the town of Fairfield, and a certified School Resource Officer at Fairfield Ludlowe High School. He is a current and founding member of the Fairfield Police Department's School Safety Unit. Officer Byington received his B.S. in Criminal Justice from Roger Williams University.

Irene Roman
Public School Teacher, Waterbury, CT
Appointed by House Minority Leader Lawrence F. Cafero; representing a certified public school teacher

Bio: Ms. Roman is the Head Teacher at Frisbie Elementary School in Wolcott, Connecticut, and is currently teaching second grade. She received her B.A. in Psychology from Quinnipiac University and her M.S. in Elementary Education from the University of Bridgeport.

Staff

John Woodmansee, CIH, CUSA
In addition to being selected as Commissioner Pryor's Designee, John also participated as a staff member for the SSIC.
Title: Education Consultant - Environmental Health and Safety
Agency: Department of Education

Jason Crisco
Title: Executive Assistant to the Commissioner
Agency: Department of Administrative Services

Craig Russell
Title: Director, State & School Construction Support Services
Agency: Department of Administrative Services, Division of Construction Services

Craig Smith, R.A.
Title: Architectural Design Reviewer 2
Agency: Department of Administrative Services, Division of Construction Services

Jenna Padula
Title: Staff Attorney
Agency: Department of Administrative Services, Division of Construction Services

Ken Rigney
Title: Sergeant, Critical Infrastructure Unit Supervisor
Agency: Office of Counter Terrorism, Critical Infrastructure Unit, Connecticut State Police, Department of Emergency Services & Public Protection

Mike Grieder
Title: Detective, Critical Infrastructure Unit
Agency: Office of Counter Terrorism, Critical Infrastructure Unit, Connecticut State Police, Department of Emergency Services & Public Protection

Brenda Bergeron, Esq.
Title: Principal Attorney
Agency: Department of Emergency Services and Public Protection

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Nina Ritson
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Agency: Department of Administrative Services, Communications

Cindy Ruszyk
Administrative Assistant
Agency: Department of Administrative Services, Communications

John McKay
Communications Specialist
Agency: Department of Administrative Services, Communications

Michael Guimond
Duplicating Services Supervisor 2
Agency: Department of Administrative Services, Communications

Appendix C

SCHOOL SAFETY INFRASTRUCTURE COUNCIL – MINUTES

The School Safety Infrastructure Council (SSIC) met a total of ten times over the course of an eight month period. The Minutes provided in this Appendix accurately describes each of the Informational Sessions and Special Meetings conducted by the SSIC during that time. These Minutes are provided as a timeline and overview of the discussions, testimony and decisions that took place before and by the SSIC.
School Safety Infrastructure Council – Minutes Archive
http://das.ct.gov/cr1.aspx?page=431

Minutes – May 31, 2013

Meeting Location: Legislative Office Building – Room 1A
Topics Covered: General introduction of members and staff. Review of legislative charge and proposed timeline.
Link: http://das.ct.gov/images/1090/SSIC_Minutes%205_31_2013.pdf

Minutes – June, 25 2013

Meeting Location: Legislative Office Building – Room 1A
Topics Covered: The Council heard expert testimony from the State Building Inspector, the Director of the region's National Fire Protection Association; the Director of the State's Emergency Management - "all hazards" Planning Group and representatives of the state's Office of Counter Terrorism.
Link: http://das.ct.gov/images/1090/SSIC_Minutes%206_25_2013a.pdf
Speakers:

- Joseph Cassidy, Acting State Building Inspector - Connecticut Department of Construction Services
- Robert Duval, New England Regional Director and James Dolan, Director of the NFPA Fire Code Field Office - National Fire Protection Association
- William J. Hackett, State Emergency Management Director, DEMS/DESPP
- Sergeant Ken Rigney and Detective Mike Grieder - DESPP Office of Counter Terrorism

Minutes – July, 15 2013

Meeting Location: Legislative Office Building – Room 1A
Topics Covered: First of three public informational sessions, the Council heard from design and architectural professionals from across the state, lock experts and representatives demonstrating a new interactive-interoperable real time audio/visual communication system linking schools, public safety officials, first responders, hospitals, utility companies and others.
Link: http://das.ct.gov/images/1090/SSIC_Minutes%207_15_2013.pdf

Speakers:

- Mutualink & Sonitrol
  o Mark Hatten, CEO/Chairman - Mutualink
  o Colin McWay, President/CFO - Mutualink
  o Joe Mazzarella, Senior V.P. & Chief Legal Counsel - Mutualink
  o Doug Curtiss, CEO – Sonitrol
- Doug Titus, Business Development Manager for Education at Assa Abloy
- Mila Kennett, Architect/Senior Program Mgr., High Performance Resiliency Program - US Department of Homeland Security Science and Technology Division
- Robert Ducibella, Ducibella Venter & Santore
- Robert D. Mitchell, Mitchell Architectural Group, P.C.
- Brian Humes, Jacunski Humes

Minutes – August 8, 2013

Meeting Location: New Britain High School, New Britain, CT – Tercyak Lecture Hall
Topics Covered: The second SSIC public informational session was dedicated to hearing from educational professionals including testimony from the state's largest teacher unions, the American Federation of Teachers (AFT) and the Connecticut State Education Association (CSEA) and also representatives of the Connecticut Federation of School Administrators, the Connecticut Association of Public School Superintendents, the Connecticut Association of Schools, the Connecticut Association of Boards of Education and the Connecticut Association of School Business Administrators.
Link: http://das.ct.gov/images/1090/SSIC_Minutes%208_8_2013.pdf
Speakers:

- Ron Chivinski, Vice-President - American Federation of Teachers CT (AFT-CT)
- Jeff Leake, Vice-President - Connecticut Education Association (CEA)
- Gary Maynard, President - CT Federation of School Administrators (CFSA)
- Don Romoser CT Parent Teacher Student Association (CT PTSA)
- Joe Cirasuolo - Connecticut Association of Public School Superintendents (CAPSS)
- Karissa Niehoff - Connecticut Association of Schools
- Robert Rader - Connecticut Association of Boards of Education (CABE)
- Sharon Bruce - Connecticut Association of School Business Administrators (CASBO)

Minutes – September 26, 2013

Meeting Location: Macdonough School, Middletown, CT - Gymnasium
Topics Covered: The final public informational session included comments from public officials, police and fire professionals, first responders and members of the public. Testimony from the Hartford Chief of Police, Middletown Fire Chief and several members of the public focused on the need for effective real time emergency response communication systems, comprehensive emergency planning which balances the need for effective life safety codes compliance with planning for other threats, the need for locking devices on class room doors and various options concerning school windows, protective treatments and laminates.
Link: http://das.ct.gov/images/1090/SSIC_Minutes%209_26_2013.pdf
Speakers:

- Police Chief James Rovella, Hartford CT

- Fire Chief Robert Kronenberger, Middletown CT
- Vincent Riccio, Security Consultant and Trainer – Security Academy of Connecticut
- Bill Letson, Armor Solutions Inc.
- Chris Olsen, Director of Safety and Security, East Lyme Schools – East Lyme, CT

Minutes – October 10, 2013

Meeting Location: State Education Resource Center, Middletown CT
Topics Covered: Review of testimony from each of the three public informational sessions. Discussion of timeline post public information gathering process, overview of Integrated Rapid Visual Screening (IRVS) for schools and of School Facility Security Products and Services Day sponsored by the Connecticut School Construction Coalition.
Link: http://das.ct.gov/images/1090/SSIC_Minutes%2010_10_2013.pdf

Minutes – October 17, 2013

Meeting Location: State Education Resource Center, Middletown, CT
Topics Covered: Continued discussion of IRVS for Schools. Early discussions of establishing guidelines for standards (Appendix A) by Council members and staff.
Link: http://das.ct.gov/images/1090/SSIC_Minutes%2010_17_2013.pdf

Minutes – November, 7 2013

Meeting Location: DESPP Headquarters, Middletown, CT – Meeting Room 348
Topics Covered: In depth review and discussion of draft narrative report and standards (Appendix A). Identification of main components of standards (Appendix A).
Link: http://das.ct.gov/images/1090/SSIC_Minutes_11_07_2013.pdf

Minutes – November 20, 2013

Meeting Location: DESPP Headquarters, Middletown, CT – Meeting Room 348
Topics Covered: Continued review of updated versions of the draft narrative report and standards (Appendix A). Discussion of other appendices to be included in final report. Overview of SSIC CT Delegation trip to Washington D.C. for two-day work-group with the U.S. Department of Homeland Security Science and Technology Division, National Institute of Buildings Sciences, State of Texas, State of Michigan and U.S. Department of Education.
Link: http://das.ct.gov/images/1090/SSIC_Minutes_11_20_2013.pdf

Minutes – December 3. 2013

Meeting Location: DESPP Headquarters, Middletown, CT – Meeting Room 348
Topics Covered: Final review and approval of School Safety Infrastructure report.
Link: To be added

Appendix D

INTEGRATED RAPID VISUAL SCREENING FOR SCHOOLS AND NATIONAL CLEARINGHOUSE FOR EDUCATIONAL FACILITIES CHECKLIST OVERVIEW

The School Safety Infrastructure Council (SSIC) recognizes that an "all hazards" approach to assessment and design is paramount in determining the risk and resilience of school building infrastructure to both man-made and natural hazards. The SSIC has also determined that in order to develop comprehensive school safety infrastructure standards, a uniform risk assessment tool is needed to ensure a threshold level of awareness, responsiveness and security. The Integrated Rapid Visual Screening (IRVS) for School Safety Project uses an "all-hazards" approach which incorporates over 30 hazard scenarios to facilitate the design and assessment of schools.

The SSIC has chosen the automated version of the IRVS for Schools as the preferred assessment tool to be used for Connecticut school building projects subject to the SSIC standards. The IRVS for Schools was created based on the National Clearing House for Educational Facilities (NCEF) checklist. A large number of the NCEF checklist components are included and expanded upon in the IRVS for Schools. However, the IRVS for School Safety program is currently in development and is not anticipated to be completed until after the SSIC's deadline of January 1, 2014. Therefore, in the interim, until the automated IRVS for School Safety Project is ready for use by states and school districts, the SSIC recommends that the NCEF checklist should be utilized.

INTEGRATED RAPID VISUAL SCREENING (IRVS) FOR SCHOOL SAFETY OVERVIEW

The Building Infrastructure Protection Series (BIPS) is a multi-volume publication created by the U.S. Department of Homeland Security (DHS) Science and Technology (S&T) Resilient Systems Division (RSD) http://www.dhs.gov/high-performance-and-integrated-design-resilience-program. The BIPS series serves to advance high performance and integrated design for buildings and infrastructure across all sectors. The series was born as a result of the events of September 11, 2001, to protect our Nation's most crucial assets. It includes multiple volumes tailored to specific areas: Mass Transit Systems; Tunnels; and Federal and Commercial Buildings.

In response to the tragic school shooting incidents that have taken place at Sandy Hook Elementary School and at other schools across the country, the U.S. Department of Homeland Security (DHS) Science and Technology (S&T) Directorate has begun development of the Integrated Rapid Visual Screening (IRVS) Process to Assess and Design Schools, which will be made available to all states and school districts at no cost. Connecticut has played an integral role in the preparation of the assessment tool with U.S. DHS to meet the needs of its educational system; develop guidance that helps the design community to design and build better schools; and set threshold requirement scores that all new school construction and

renovate as new projects should meet to ensure a safe environment for students and teachers. The IRVS for Schools is currently in draft manual form. Once completed and transformed into digital format, it will become part of the Buildings and Infrastructure Protection Series (BIPS) as the twelfth module in the series. DHS anticipates that the tool will be completed sometime in early to mid 2014.

The IRVS for School Safety is a modified version of the IRVS of Buildings (BIPS 04), which was created to assess the risk and resiliency of commercial buildings (excluding schools) and is the product of multiple partnerships. DHS S&T worked with various public and private sector entities to develop the IRVS methodology. The validation process of the IRVS methodology was conducted through a series of alpha and beta tests and a pilot test program of selected municipalities. The pilot test cities included Arlington, VA; Albany, NY; New York, NY; Washington, D.C.; Los Angeles, CA; Charleston, SC; and Chicago, IL. Equally important, the IRVS for School Safety methodology is based on the risk management process identified by the Interagency Security Committee for federal security professionals responsible for protecting nonmilitary federal facilities in the United States adapted for school buildings. The complete IRVS for School methodology will be comprised of software, and a manual, based on the Integrated Rapid Visual Screening Series (IRVS) for Commercial Buildings (BIPS 04), "Primer to Design Safe School Projects in Case of Terrorist Attacks and School Shootings" (BIPS 07), and the "Integrated Rapid Visual Screening: Interagency Security Committee (ISC) Screening Module" (BIPS 11).

BIPS 04: http://www.dhs.gov/bips-04-integrated-rapid-visual-screening-series-irvs-buildings
BIPS 07: https://www.dhs.gov/bips-07-primer-design-safe-school-projects-case-terrorist-attacks-and-school-shootings-2nd-edition
BIPS 11: Is currently only "For Official Use Only" and not viewable by the public.
The IRVS ISC version, in which the IRVS for Schools has its foundation, is currently being used by 32 federal and state entities, including but not limited to the following:

- St. Clair County, Michigan
- State of New York
- New York City Police Department
- Port Authority of Long Beach, CA
- U.S. Department of the Interior – Bureau of Indian Affairs
- U.S. Department of Homeland Security Immigration and Customs Enforcement
- U.S. Department Federal Protective Service Division National Protection and Program Management Directorate
- U.S. Department of Defense Threat Reduction Agency
- Smithsonian Institution
- U.S. Department of Justice – U.S. Marshall's Office
- U.S. Department of Health and Human Services
- U.S. General Services Administration

The ISC standards can be characterized as performance-based design standards (PBD), which are used to achieve specific performance levels for predetermined building components

in order to reach desired results. These requirements outline what the required level of performance is and allow end users the ability to determine the best course of action to mitigate the risk. This performance-based design approach varies from a prescriptive design approach, which is found in most building codes, and states exactly how something is to be done. Implicitly, PBD endorses the use of higher standards in lieu of the limited safety standards generally included in U.S. building codes. In terms of the School Safety Project, it is anticipated that the performance-based design approach will allow schools to be designed at a higher performance level with a greater amount of flexibility and cost effective returns. Once completed, the IRVS for Schools tool will allow for a quick and efficient way to quantify the risk and resilience of a single school or a group of school buildings through an "all-hazards" approach. "All-hazards" encompasses all man-made (as applicable to schools) and selected natural hazards that are a threat to the operations of a school facility. The IRVS for Schools is intended to be used during the design phase of construction, or may be used to assess existing facilities to help determine a school's safety and security vulnerabilities, and further ascertain an efficient and cost effective course of action to increase the level of protection to mitigate the defined risk. The overall purpose of the IRVS School Safety Project is to enhance the resistance of our Nation's schools against multiple undesirable events and to meet specific performance requirements at the highest possible level.

Major Components of the IRVS for School Safety Project, as Modified by the SSIC:

- School Security Level: Attempts to quantify the level of risk that exists at a particular school as measured by potential casualties, building damage, restoration costs, etc., for each of the potential high risk threats identified in the Undesirable Event Analysis. This analysis establishes a baseline school security level.
- Undesirable Events: Encompasses all conditions, environmental or manmade, that have the potential to cause injury, illness, or death; damage to or loss of equipment, infrastructure services, or property; or social, economic, or environmental functional degradation to schools.
- Level of Protection: Allows for the identification of school vulnerabilities for each undesirable event and categorizes and rank measures them to serve as the basis for implementing protective measures for school safety.
- Compliance: Once a local school district has completed the assessment; identified potential vulnerabilities and proposed specific plans to remediate deficiencies and secure compliance, the Connecticut Department of Administrative Services Office of School Facilities Plan Review Unit will evaluate the local plan for adequacy and continue to work with local districts to ensure compliance with established safety and security standards.

IRVS NEXT STEPS

In order to expedite the adoption of IRVS for School Safety Project, the U.S. DHS and its partners have established an informal review committee for the preparation of the manual. This committee will be responsible for launching a standardized and categorized

methodology for risk assessment, applicable to all schools, to enhance the quality and effectiveness of physical security nationwide. All documentation and software related to the IRVS for Schools Safety Project is currently For Official Use Only (FOUO) and viewable only by those involved in the IRVS Committee Standing Partnership.

IRVS Committee Standing Partnership

- U.S. DHS Science and Technology Directorate
- U.S. Department of Education
- School Safety Infrastructure Council of Connecticut
- Katy Independent School District of Texas
- State of Michigan

NATIONAL CLEARINGHOUSE FOR EDUCATIONAL FACILITIES (NCEF) CHECKLIST

The NCEF checklist is currently in use by Connecticut's School Security Competitive Grant Program. All Connecticut public schools are eligible for the program. A school must complete the entire NCEF checklist before its security infrastructure costs may be eligible for state reimbursement through the program.

The NCEF checklist is designed for assessing the safety and security of school buildings and grounds. Created by the National Clearinghouse for Educational Facilities and funded by the U.S. Department of Education's Office of Safe and Drug-Free Schools, the checklist combines the nation's best school facility assessment measures into one comprehensive online source. Nationally recognized school facility and safety experts participated in the checklist's creation.

The checklist embodies the three principles of Crime Prevention through Environmental Design (CPTED): natural surveillance, the ability to easily see what is occurring in a particular setting; natural access control, the ability to restrict who enters or exits an environment; and territoriality-maintenance, the ability to demonstrate ownership of and respect for property.

Although the NCEF checklist project is fully operational, it's funding was terminated as of September 1, 2012, the SSIC is recommending it as the preferred assessment tool until the IRVS for School Safety Project is complete. The NCEF checklist is still the most widely recognized checklist available.

Appendix E

TECHNICAL COMPLIANCE MANUAL OVERVIEW

The Technical Compliance Manual provides recommendations that are intended to foster proper design and management of the facility; maintain an open, inviting, pleasant environment for teaching and learning, while ensuring a safer environment for students and faculty. Using an "all hazards" approach to assessment and design, this manual expands upon the nine identified Critical Compliance areas from Appendix A, in addition to other areas that require greater flexibility with regard to compliance. Due to its comprehensive nature and technical content, the manual remains a work-in-progress and will require further development before being released. Once complete, the manual will be incorporated into the SSIC final report as an updated and free standing Appendix E to be used by design and architectural professionals.

The Technical Compliance Manual will be applicable to all (state funded) public school construction projects, including but not limited to: (1) New Construction, (2) Renovation (C.G.S. Sec. 10-282(18)), (3) Alterations, (4) Extensions (Additions).

The document is intended to: (1) Provide comprehensive guidance for the facility owners in bridging the "Assessment to Compliance" process. (2) Serve as a guide to determine the necessary level of protection required to address identified deficiencies from the Level Of Protection (LOP) Analysis of the facility assessment. (3) Provide a set of guidance materials with a range of options to cost effectively modify existing facilities or incorporate these options into the design of a new facility. (4) Facilitate the cross-referencing of various Department of Homeland Security (DHS) Building Infrastructure Protection Series (BIPS) documents or parts thereof (from the assessment process) to assist in the proper mitigation approach. (5) Suggest specification language for design professionals to incorporate as a part of the construction documentation.

Instead of confusing the user with the various principles of crime prevention or building design, this document applies a more straight-forward approach. By identifying the various facility elements, coupled with current recognized industry standards, optional choices, and how-to/where-to guidance, the user can pick and choose the best approach, applicable to the specific facility. This document is being developed to incorporate a reasonable performance-based response as well as guidance towards an acceptable mitigation approach.

The manual and recommendations provided in this document are not intended to supersede or take precedence over any current state or federal laws, codes or standards.

The desired school design should: (1) Protect against natural and man-made hazards. (2) Provide for a safe, healthy, comfortable, and secure environment. (3) Develop an enhanced, inviting learning environment. (4) Allow flexibility to also serve as a center of the community. (5) Consider Energy efficiency wherever applicable.

After an assessment has been completed, the assessment team should identify the critical areas of deficiency and, using the LOP Chart, select the appropriate item(s) matching the desired resistance value(s) to determine/select the applicable standard for that item. That item and standard can then be conveyed to the proposed project's design team to incorporate when developing the set of construction documents that will be released for bidding purposes and eventually constructed. These items will not be subject to value-engineering, without prior review and approval by the DAS/OSF. Any proposed substitution must be deemed equivalent to the minimum standard established by the School Safety Infrastructure Council, before it is allowed as a substitution.

Many existing facilities may be unable to meet the guidelines and/or recommendations established by the manual, as existing geographical, structural, architectural, mechanical, electrical, or other infrastructure systems may pose limitations for full compliance. However, if the options offered in this document do not adequately address the individual facility's needs, the owner may seek advice, regarding alternatives, from the Office of School Facilities Technical Review Unit, or seek a waiver of a particular established Standard from the Commissioner of Administrative Services.