
I – MITIGATION/PREVENTION

SECTION I – MITIGATION/PREVENTION

Mitigation . . . encourages long-term reduction of hazard vulnerability.

-- FEMA, 2002

A. REDUCING EXPOSURE TO HAZARDS AND RISKS

MITIGATION is defined as proactive action taken to reduce or eliminate the adverse effects of natural and man-made hazards on people and property. The goal of MITIGATION is to decrease or eliminate the need for response as opposed to simply increasing response capability. Mitigation begins by conducting a district and school hazard assessment, which requires a self-appraisal of major areas effecting school safety. These areas include geographic location of buildings, proximity of potential hazards such as waterways, availability of buses for possible evacuation, structural integrity of buildings, etc.

The terms "hazard" and "risk" are often used interchangeably in the context of mitigation. Hazards and risks are identified through vulnerability analysis, consequence modeling, code/regulation compliance, quantitative risk assessment and historical data correlations. **Risk is the product of potential consequences and the expected frequency of occurrence. The basic concept of acceptable risk is the maximum level of damage to the building that can be tolerated, related to a realistic risk event scenario or probability.** Consequences may include death, serious injury, the extent of structural damage, monetary loss, interruption of use, or environmental impact.

Risk managers use two different evaluative methods in risk and hazard analysis: deterministic and probabilistic. These two methods can complement one another to provide additional insights to the analysis.

- **DETERMINISTIC ANALYSIS** relies on correlations developed through experience or testing, to predict the outcome of a particular hazard scenario.
- **PROBABILISTIC ANALYSIS** evaluates the statistical likelihood that a specific event will occur and what losses and consequences will result. History from events involving similar buildings or equipment, building contents, or other items should be considered, along with the frequency of occurrences of a particular type of event.

Mitigation assesses and addresses the safety and integrity of the following types of hazards to minimize or prevent adverse impacts:

- ◆ **FACILITIES** - window seals, HVAC systems, building structure
- ◆ **SECURITY** - functioning locks, controlled access to the school
- ◆ **THREATS** - probability of natural disasters or accidents
- ◆ **SCHOOL ENVIRONMENT** - social climate on campus

Resources include: existing safety plans, security and safety-related district policies, floor plans of buildings, maps of local evacuation routes, school crime reports, known safety and security concerns, logs of police calls for service, student and faculty handbooks, disciplinary files and local memos of safety concerns.

FACILITIES - Structural and non-structural measures can mitigate the effects of natural hazard incidents.

- **STRUCTURAL MITIGATION** includes physical rectification and standards such as building codes, materials specifications and performance regulations for the construction of new buildings; the retrofitting of existing structures to make them more a hazard-resistant; and protective devices such as retaining walls. California's frequency of earthquake activity has resulted in sophisticated seismic building codes for all buildings and special inspection requirements, enforced by the state, for school buildings. **Building codes establish the minimum standards for safety.** The construction of hazard-resistant structures is perhaps the most cost-effective mitigation measure. Hazard mitigation in existing structures is generally more costly, but when carried out effectively before a disaster, prevents loss of life, reduces damage and avoids the outlay of associated costs for response and recovery operations.
- **NON-STRUCTURAL MITIGATION** measures typically concentrate on the securing of light fixtures to ceilings, installation of wind shutters, strapping or bolting generators to walls, and numerous other techniques to prevent injuries and allow for the continued use of the school site. School occupants are particularly vulnerable to nonstructural damage. Excessive sway in any building may cause damage to nonstructural components such as hung lath and plaster ceilings, partitions, water pipes, ductwork, electrical conduits, and communication lines. Storage units, filing cabinets and library shelving shift or fall if not properly braced. Although students and staff may duck under desks and be safe from falling objects, ceiling components that drop in hallways and stairs can make movement difficult, particularly if combined with power failure and loss of lights. Additional falling hazards that are common in schools are wall-mounted televisions or ceiling mounted projectors.

SECURITY - Communities are encouraged to treat schools as essential community facilities because of the significant impact on students and the locale if a damaged school is closed for an extended period of time. A higher level of protection is appropriate for facilities that will enhance community recovery, including schools which may be designated as emergency shelters, and other buildings that support vital services. A hazard assessment should assure that the school buildings have functioning locks and controlled access.

THREATS - Mitigation requires assessment of local threats, including the probability of industrial accidents and natural disasters. Threat assessment considers potential hazards in the neighborhood such as high voltage power lines; facilities containing toxic, chemically reactive and/or radioactive materials; transportation routes of trucks and trains carrying hazardous materials; underground gas and oil pipelines; underground utility vaults; above-ground transformers; multi-story buildings vulnerable to damage or collapse; and water towers and tanks. Since location is a key factor in determining the risks associated with natural hazards, land use plans are a valuable tool in identifying areas that are most vulnerable to the impacts of natural hazards such as wildfires, earthquakes and flooding.

- **FIRE** - Of the many hazards that can endanger a school facility and its service to the community, the most prevalent is fire. Design against fire has long been built into state building codes, in the form of approved materials, fire-resistant

assemblies, exiting requirements, the width and design of stairs, the dimensions of corridors, fire suppression systems, and many other standards.

- **EARTHQUAKE** - A simple seismic evaluation that focuses specifically on schools is rapid visual screening. This method is intended as an initial step in identifying hazardous buildings and their deficiencies. It is most useful for large school districts by providing an economical preliminary evaluation of the seismic risks, thereby reducing the number of buildings that require a more detailed evaluation by a structural engineer. The visual survey of a building can be completed in less than 30 minutes and can be accomplished from the street without benefit of entry into a building. However, hazardous details may not be visible, and seismically dangerous structures may not be identified as such. Nonstructural interior components are not evaluated.
- **FLOODING** - Flooding is the most common natural hazard in the United States, affecting over 20,000 local jurisdictions and representing more than 70 percent of Presidential Disaster Declarations. Factors that can affect the frequency and severity of flooding and the resultant types of damage include: channel obstructions due to fallen trees, accumulated debris and ice jams; culvert openings that are insufficient to move floodwaters; erosion of shorelines and stream banks; deposition of sediment that is carried inland by wave action; and dam and levee failure that may result in sudden flooding of areas thought to be protected.

SCHOOL ENVIRONMENT - School policies and protocols should support a safe school environment and orderly procedures during emergencies. Determine who is responsible for overseeing violence prevention strategies in the school, and disseminate information to staff regarding the early detection of potentially dangerous behaviors. Conduct an assessment to determine how the school environment may impact its vulnerability to certain types of crises. Review incident data and determine how the school will address major problems with regard to student crime and violence. Provide staff training on identification of risk and protective factors to help children. Link prevention and intervention programs to community resources, including health and mental health. Develop strategies for improving communication and students and between students and staff. Provide safe and confidential ways for students to report potentially violent incidents.

Schools and districts should be active partners in community-wide risk assessment and mitigation planning. The local fire department can assist school administrators in identifying potential structural and non-structural hazards. To help agencies work together, they may want to develop a Memorandum of Understanding (MOU) that outlines each agency's responsibility during an emergency. A Sample MOU between a school district and a local fire department is included among the Sample Agreements in **APPENDIX B**.

B. CONDUCTING A SAFE SCHOOLS HAZARDS ASSESSMENT

Each school year, prior to the arrival of the teaching staff, the principal and/or designee should undertake a physical survey of all hazards likely to be encountered in the evacuation routes from classrooms and other activity rooms to safe, open-space areas. **During the first month of the school year, each teacher should conduct a classroom hazard assessment to be submitted to the principal.** The purpose of these hazards

assessments is to identify and report for correction any existing conditions that pose potential risk to the occupants of school buildings and to the facilities.

COMPOSITION OF THE HAZARD ASSESSMENT TEAM: The Hazard Assessment Team should be a diverse group of people concerned with the safety of the school. An ideal group might include:

- Custodian/Maintenance Supervisor
- School Administrator
- Local Fire Official or Civil/Structural Engineer

OPTIONAL:

- Teacher
- Social Worker or Counselor
- Student
- Parent

⇒ Make regular school safety audits and security efforts part of the ongoing mitigation/prevention practices.

ACTION CHECKLIST: Prior to conducting a hazard assessment/school safety audit, the team members should review the School Emergency Management Plan, blueprints of the campus, school accident and incident data and prior assessment reports. A proactive process will help maintain a safe and secure learning environment.

- Determine what crisis plans exist in the district, school, and community.
- Identify all stakeholders involved in crisis planning.
- Gather information about the school facility, such as maps and the location of utility shutoffs.
- Connect with community emergency responders to identify local hazards.
- Review the prior safety audit to examine school buildings and grounds.
- Conduct an assessment to determine how these problems—as well as others—may impact school vulnerability to specific crises.
- Develop procedures for communicating with staff, students, families, and the media.
- Establish procedures to account for students during a crisis.
- Identify the necessary equipment that needs to be assembled to assist staff in an emergency.

BUILDING AND CLASSROOM HAZARD HUNT: The purpose of the hazard hunt is to identify any special circumstances which exist in the school or near the campus which present unique problems or potential risk to people or property. A walk-through inspection of each area of each building should be conducted using the School Safety/Hazard Checklist, included in **APPENDIX C**.

The interior and exterior portions of all school buildings and school grounds should be assessed for potential hazards that may impact the site, the staff and the students, including the following:

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| ▪ Classrooms | • Bathrooms |
| ▪ Corridors | • Boiler Room |
| ▪ Laboratory/Shop | • Kitchen/Cafeteria |
| ▪ Offices | • Teacher's Lounge |

- Custodial Room
- Storage Room
- Yard (and Playground)
- Multipurpose Room
- Computer Lab
- Parking Lot
- Outside structures and Fencing
- Gymnasium

The hazards may include:

- ❑ Proximity to toxic, flammable, corrosive, chemically reactive or other hazardous materials
- ❑ Proximity of high voltage power lines
- ❑ Proximity to earthquake fault lines
- ❑ Likelihood and possible effects of flooding, including proximity to creeks that may surge over their banks
- ❑ Likelihood of a wildland fire
- ❑ Likelihood of severe weather
- ❑ Hanging fixtures on ceilings, such as fluorescent lights.
- ❑ Locations of windows, particularly those near doorways.
- ❑ Stability of bookcases and shelving in classrooms as well as the objects on the shelves, cabinets and hanging on walls.
- ❑ Stability of water heaters.
- ❑ Security of AV equipment, computers, TV monitors, piano, aquariums, etc. from motion during an earthquake.
- ❑ Impediments to evacuation and transportation
- ❑ Inadequate storage of chemicals and labeling on containers.

HAZARD MITIGATION CHECKLIST: The School Safety/Hazard Assessment Checklist included in **APPENDIX C** describes specific areas and conditions for hazard inspection. Indicate the names of those conducting the inspection and the inspection date in the spaces provided at the bottom of each form. Complete each section of the checklist. For problem areas, briefly describe the situation and actions requested to correct or remove the identified hazard, if possible to do so.

Recommendations should be constructive in nature and attempt to offer to the principal or administrator solutions to safety problems in the school. Following a major disaster, a school community might reexamine how building configurations may be rearranged to improve access and services to avoid repetitive damage. Post-disaster mitigation may be applied on a structure-by-structure basis to strengthen hazard resistance and provide energy efficiency and environmental sensitivity.

STAFF SKILLS INVENTORY FOR EMERGENCY MANAGEMENT PLANNING:

A Staff Skills Inventory will help administrators plan assignments to emergency teams. A sample inventory is provided among the forms in **APPENDIX E**. The information provided should identify the following areas in which members of the staff have training or expertise:

- First Aid
- CPR
- Hazardous Materials
- Emergency Medical
- Incident Debriefing
- CB Radio/Ham Radio Experience
- Search and Rescue
- Counseling/Mental Health
- Fire Fighting
- Media Relations
- Multilingual Fluency

TEACHER SURVEY - STUDENTS NEEDING SPECIAL ASSISTANCE:

At the beginning of each semester, teachers should provide to the main office the name(s) of students in the class who will require special assistance in the event of an emergency and the type of assistance needed. A variety of emergency conditions which may alter needs (e.g., severe weather, evacuation, hazardous materials, etc.) should be considered. Preparedness for students needing special assistance is addressed in more detail in **Section II, PREPAREDNESS**

C. VISITOR SCREENING POLICY

A visitor-screening policy (described later in this section) should be developed with signage to direct school visitors to the sign-in area.

- ❑ Post signs at key arrival points directing all visitors to the entry door.
- ❑ Pass visitors through an office or sign-in area that offers verbal and visual contact with staff or volunteers.
- ❑ Ask all visitors to sign-in and provide them with an I.D. badge or other visitor pass
- ❑ Designate individuals to ask the person's name, area or room to be visited, and nature of the visit.
- ❑ If the visitor is new to the school or unsure of the room location, have a volunteer or staff member meet or accompany him/her.
- ❑ Direct visitors to return to sign out upon leaving the building. There should be no exceptions to the policy.
- ❑ Acquaint parents, PTA organizations, etc. with the policy and the need to know who is in the building.
- ❑ Familiarize all teachers and staff with the visitor screening policy.
- ❑ Encourage staff to question people on the campus without a visitor pass and ask them to check in with the office before proceeding to the intended destination.

D. VIOLENCE PREVENTION

The first step in school violence prevention is to perform a systematic assessment to determine what the school might do proactively to inhibit hostile and anti-social behavior. One approach is to examine how the peaceful interaction of individuals and groups is facilitated by policies, programs and processes in the classroom, the school building and the district office. Does the school have a policy on weapons possession and aggressive behavior? Are students aware of the policy? Is it consistently enforced? How is such behavior supported or discouraged by the school climate and the expectations of the staff and other students? Has school staff received training in nonviolent conflict resolution? Are students appropriately supervised? Have staff members been taught to spot the potential for such incidents and to defuse them?

The principal can help establish school norms of nonviolence and pro-social community by developing sincere, caring relationships with groups of students and individuals, maintaining a high profile, visiting classrooms, and being accessible to students and staff.

RISK FOR HARM ASSESSMENT

Risk for Harm assessment provides a framework for schools to conceptualize risk based on a review of warning signs, general risk factors, precipitating events and stabilizing factors. A response plan to maintain school safety and help students gain access to needed services or interventions is based on the present risk for harm. The following descriptors

are not an exhaustive list of behaviors and possible responses but provide a useful frame of reference.

◆ **Low/No Risk for Harm**

Upon review it appears there is insufficient evidence for any current risk for harm. Situations under this category can include misunderstandings, poor decision making, false accusations from peers (seeking to get other peers in trouble), etc. Responses may include (but are not limited to): investigation of the situation, notification and involvement of others as needed, administrative action.

◆ **Minor Risk for Harm**

A student has displayed minor early warning signs, but assessment reveals little history of serious risk factors or dangerous behavior. Stabilizing factors appear to be reasonably well-established. There may be evidence of the unintentional infliction of distress on others (insensitive remarks, “teasing” taken too far, etc.). Responses may include (but are not limited to): review of school records, parent notification, psychological consult, security notification, administrative action.

◆ **Moderate Risk for Harm**

A student has displayed some early warning signs and may have existing risk factors or recent precipitating events, but also may have some stabilizing factors. There may be evidence of internal emotional distress (depression, social withdrawal, etc.) or of intentional infliction of distress on others (bullying, intimidation, seeking to cause fear, etc.). Responses may include (but are not limited to): security response, parent notification, psychological consult/evaluation, background or records check, ongoing case management.

◆ **High Risk for Harm**

A student has displayed significant early warning signs, has significant existing risk factors and/or precipitating events and few stabilizing factors. May not qualify for hospitalization or arrest at present, but requires referrals for needed services and active case management. Responses may include (but are not limited to): immediate action to secure student, security response, parent notification, psychological consult/evaluation, background check, ongoing case management.

◆ **Imminent Risk for Harm**

A student is, or is very close to, behaving in a way that is potentially dangerous to self and/or others. Examples include: detailed threats of lethal violence, suicide threats, possession and/or use of firearms or other weapons, serious physical fighting, belligerence, etc. Responses may include (but are not limited to): immediate action to secure student, arrest or hospitalization, facility LOCKDOWN, security response, parent notification, background or records check and ongoing case management.

PREVENTION PROGRAMS AND STRATEGIES

There is great variation in the types of violence prevention strategies and programs instituted at different schools.

- ◆ **SCHOOL-MANAGEMENT-BASED** - These programs focus on discipline and student behavior, alternative schools and cooperative relationships with police and law enforcement.

- ◆ EDUCATIONAL AND CURRICULUM-BASED - These programs concentrate on teaching students behavior-management skills and nonviolent conflict resolution.
- ◆ ENVIRONMENTAL MODIFICATION - These are programs based on changing student behavior by changing students' social or physical environment. This includes installing metal detectors and hiring security guards, but also includes larger-scale programs like setting up after-school programs and increasing or decreasing school size.

Among the many violence prevention strategies used are:

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| ▪ Alternative programs or schools | ▪ Mediation training |
| ▪ Closed campus for lunch | ▪ Multicultural sensitivity training |
| ▪ Closed-circuit television | ▪ Parent skill training |
| ▪ Collaboration with other agencies | ▪ School board policy |
| ▪ Conflict resolution/peer mediation | ▪ Search and seizure |
| ▪ Dress code | ▪ Security personnel in schools |
| ▪ Drug-detecting dogs | ▪ Specialized curriculum |
| ▪ Establishing safe havens for students | ▪ Staff development |
| ▪ Expulsion | ▪ Student conduct/discipline code |
| ▪ Gun-free school zones | ▪ Student photo identification system |
| ▪ Home-school linkages | ▪ Support groups |
| ▪ Law-related education programs | ▪ Suspension |
| ▪ Locker searches | ▪ Telephones in classrooms |
| ▪ Mentoring programs | ▪ Volunteer parent patrols |
| ▪ Metal detectors | ▪ Work opportunities |

There is no one-size-fits-all solution. To reduce school violence schools must innovate, try multiple approaches, conduct proper evaluations and make the information available to parents to enhance both parental options and accountability.

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