

Mitigation for Schools and School Districts

School preparedness is strengthened by prevention, protection, mitigation, response, and recovery activities (also known as the five preparedness mission areas—see the text box to the right).¹ This fact sheet describes what mitigation is, how mitigation is connected to the other preparedness missions, what mitigation efforts planning teams may want to consider, and how mitigation activities can be integrated into planning efforts; additional resources are provided, as well.²

Ideally, schools (public or nonpublic) or school districts will stop emergencies from occurring in the first place. For example, violence can be prevented through the implementation of bullying and hazing prevention programs. However, some incidents cannot be prevented, such as an earthquake that impacts the whole community. Therefore, planning teams need to identify how to eliminate or reduce the impact from (or mitigate) these threats and hazards.

Schools and school districts are already familiar with mitigation efforts in the areas of safety, security, and emergency management—which together make up preparedness. For example, fire drills in schools have been conducted for decades to reduce injuries and loss of life from a building fire, which is one reason why fatalities caused by school building fires are rare.³ When it comes to preparing for threats and hazards—no matter the size—it is simply a matter of expanding current efforts. For example, drills can be

MISSION AREA DEFINITIONS

- **Prevention** is the action schools take to prevent a threatened or actual incident from occurring.
- **Protection** is the ongoing actions schools and districts take to safeguard the school, students, and staff from an emergency event.
- **Mitigation** focuses on actions schools and districts take to eliminate or reduce the loss of life, injuries, and property damage from an emergency event.
- **Response** is putting the school's and district's plans into place to effectively respond to an emergency event, and provide for the immediate needs of students and staff.
- **Recovery** is teaming with community partners to restore educational programming; the physical environment; business operations; and social, emotional, and behavioral health.

¹ *School* refers to all types, including private and public, and all grade levels for the purposes of this fact sheet.

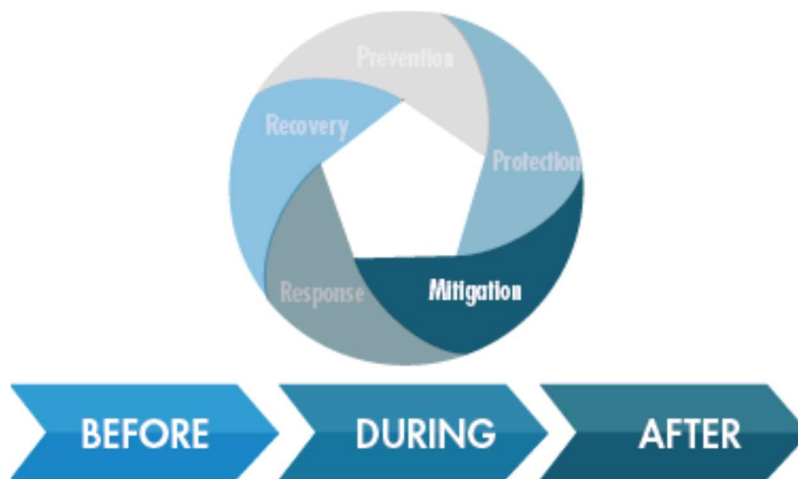
² Fact sheets on the other four areas of *prevention*, *protection*, *response*, and *recovery* can be found on the REMS TA Center's Website at <https://remstacenter.org>.

³ Statistical reports on the U.S. fire problem, U.S. Fire Administration. <https://www.usfa.fema.gov/data/statistics/reports.html>

conducted to prepare for other emergencies that could impact the community, such as an earthquake.

Mitigation as a Component of Preparedness

The five mission areas of prevention, protection, mitigation, response, and recovery are all connected and directly contribute to preparedness. **Mitigation** can be seen as the next logistical



step for planning teams to consider if **prevention** of a hazard or threat is not possible. Continuing with the earthquake scenario, while a school may not be able to stop an earthquake from happening, it may be able to reduce its impact through efforts such as securing building contents. **Protection** activities, such as ongoing training and exercises, can also overlap with **mitigation** efforts. The training

and exercising of what to do in an earthquake (i.e., Drop, Cover, and Hold On) can help keep the whole community safe when one does occur. If a **response** to an incident is immediate and effective, these actions can further help with **mitigation**. In the case of an earthquake, the proper evacuation of, accounting for, and relocation of students from damaged buildings can help ensure that all the students remain safe and are reunited with their families. Finally, the **recovery** stage of an emergency is a great time to identify and implement new **mitigation** efforts. An earthquake's shaking may have damaged computer equipment by throwing it to the ground. As school personnel and their partners conduct physical and structural **recovery**, they may identify a need for additional **mitigation** activities, such as securely strapping computers to furniture so they won't move in future earthquakes.

Examples of Mitigation Activities

Schools and school districts should consider the following mitigation activities, in collaboration with their community partners, to help make them more resilient to emergencies:

- **Select an appropriate site for new buildings.** Ideally, school buildings should be located in an area that is less prone to disasters. For example, when possible, schools should not be built in a mapped hazard zone in communities at risk from tsunamis or flooding. For new schools

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being built in areas with seismic risk, consider soils, landslide potential, and proximity to fault lines.

- **Conduct structural mitigation of buildings**, especially if the school is located in an area that has little or no advanced warning of a threat or hazard (e.g., earthquake, tornado). Structural mitigation focuses on building components whose primary function is to support the building and that are typically incorporated into the building design and construction. These components include elements such as vertical supports (e.g., columns, posts, pillars), horizontal supports (e.g., trusses, girders, beams), and diagonal elements (e.g., braces). The goal of structural mitigation is for the building to resist the possible forces it could encounter through appropriate design and construction. In some instances, building and industry codes may not be stringent enough. So, performance-based design is needed, which involves designing a building to meet certain performance objectives, such as the need to prevent a building collapse.
- **Conduct nonstructural mitigation**. Nonstructural mitigation focuses on portions of the building that are not connected to the superstructure, such as utility systems. To prepare for earthquakes, schools can take actions such as securing roof tiles in place with tile clips and adding seismic sway bracing to boilers.
- **Secure building contents**. Contents can be secured to walls or furniture that will not move if the school is in an area threatened by severe weather or earthquakes. Equipment and supplies such as computers can be elevated to prevent them being damaged from flooding, and chemical supplies (for both cleaning and academics) can be stored in containers that will keep them upright and prevent spilling and mixing in the event of an earthquake or flood.
- **Adapt the school grounds**. In some cases, the property around buildings can also be managed to limit the effects of hazards and threats. For example, vegetative buffers can be integrated into parking lots and trees planted to reduce stormwater runoff, and defensible spaces (the buffer between a building and the grass, trees, shrubs, or any wildland area that surround it) can be established to protect buildings from wildfires.
- **Conduct exercises** to practice how to respond in an emergency, validate the school's or school district's emergency operations plan (EOP), and strengthen partnerships. Exercises can be discussions based or operations based and range from seminars to full-scale exercises. Schools and school districts should also participate in America's Prepareathon (<https://community.fema.gov/>), which is a nationally instituted, community-based campaign that provides preparedness support for communities. America's Prepareathon provides information and resources, such as exercise playbooks, for a variety of hazards. America's Prepareathon also provides information and resources for the Great ShakeOut, which is an annual earthquake drill to help schools, organizations, and homes practice what to do in an earthquake.

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- **Establish and strengthen relationships.** Planning and response teams should form relationships and networks with community partners and others who may play a role in helping in an emergency, which will facilitate a quick and effective response and recovery.
- **Identify, acquire, and store emergency resources.** Resources could include the following:
 - materials and services that support the school's continuity of operations in an emergency, such as a back-up generator and back-up computer networks, systems, and data
 - specialist equipment for response teams, such as tools for a Light Search & Rescue Team or a Teen Community Emergency Response Team
 - emergency supplies for administrators, classrooms, and teachers and students, including those with disabilities or access and functional needs
- **Purchase insurance,** such as general liability insurance and cyber insurance to cover the costs associated with a cyber incident. Note that some insurance companies provide discounts or other benefits to schools that conduct assessments (see Step 2, below).

Integrating Mitigation Efforts Into Emergency Planning

To aid in the creation, review, or revision of EOPs—or a part(s) of the EOP—the *Guide for Developing High-Quality School Emergency Operations Plans (School Guide;* http://rem.s.ed.gov/docs/REMS_K-12_Guide_508.pdf) recommends a six-step planning process that is flexible, adaptable, and customizable to the building level. An understanding of the activities that can be conducted in the mitigation mission area—and all five mission areas—can help generate ideas for what needs to be included in the EOP as planning teams progress through these steps.

Step 1: Form a collaborative planning team. The planning team will likely comprise a core planning team, school personnel, and a school district representative. If team members later identify that specific mitigation activities (or actions from the other four mission areas) need to be included in the EOP, they can seek input from individuals with expertise or experience in that area. When planning for earthquakes, the team can seek guidance from architects, engineers, and representatives from the local planning, building, and emergency management departments, among others.

Step 2: Understand the situation. Here, the planning teams identifies threats and hazards—such as earthquakes—to the school and surrounding community using a variety of assessment tools. The team will also need to identify what additional emergencies may be caused by the first threat or hazard—called cascading or secondary effects. For example, if the school is located near a large body of water, the planning team may identify that the school is also at risk from

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an earthquake-caused tsunami (a secondary/cascading effect). The team will then assess all the risks and prioritize them for inclusion in the EOP.

To prepare for an earthquake, the planning team will likely look to an engineer or architect (see Step 1) to help determine the potential earthquake-related risk to the school building(s) through a seismic evaluation.

Step 3: Determine goals and objectives and **Step 4: Plan development (identify courses of action)**. After assessing the level of risk posed by threats and hazards, the planning team works to determine goals and objectives to achieve the best outcome for before, during, and after an incident. Then, the team develops courses of action that describe the who, what, when, and how to meet those objectives. Mitigation goals, objectives, and courses of action can be identified during both steps.

- A possible *goal* for preparation before an earthquake could be the following: Prevent damage to school buildings and property.
- One mitigation-focused *objective* to meet that goal could be the following: Ensure that building contents are secured to the building, as appropriate.
- Some *courses of action* could be identifying what building contents need to be secured, who makes this decision, who implements the recommendations, and how often this is done.

Step 5: Plan preparation, review, and approval. Now the planning team creates a draft of the EOP. Mitigation efforts can be included in hazard- and threat-specific annexes and functional annexes that address cross-cutting activities that apply to many incidents (e.g., recovery).

School and school district mitigation should be coordinated and integrated with those of the local municipality, which in turn will be integrated with those at the state and federal levels as described in the National Mitigation Framework (see the Key Resources section below for more information). While collaboration with local government across all five mission areas is important, coordination is especially important with mitigation, as the local jurisdiction will dictate sites where schools and buildings can be built, zoning, and building codes, and it will likely also have access to mitigation funds. Some states even require schools to be included in their State Hazard Mitigation Plan.

The draft EOP is then circulated to the school's or school district's senior leadership and those responsible for implementing the plan for their review, edits are made based on those comments, and approval is sought from the school's or school district's administration.

Step 6: Plan implementation & maintenance. Here, the plan is maintained via regular reviews and revised when needed. Further, individuals with roles outlined in the annex are trained in their responsibilities and tested through exercises, such as earthquake and evacuation drills.

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Key Resources

Resources available to support mitigation planning efforts include:

- **National Mitigation Framework, U.S. Department of Homeland Security.** The National Mitigation Framework is one of the five National Planning Frameworks and describes how the nation manages risk and mitigation roles across the whole community.
<https://www.fema.gov/national-mitigation-framework>
- **Mitigation and Resiliency Strategies for Schools and Institutions of Higher Education, REMS TA Center.** Presenters in this archived Webinar describe how mitigation is a component of preparedness and how school and school district mitigation plans should be integrated with local and state mitigation plans. Presenters also share examples of mitigation efforts from school and higher ed communities.
<http://rem.ed.gov/MitigationResilienceForSchoolsIHEs>
- **Using the Five Preparedness Missions to Help Ready Your School District and School for Emergencies Webinar, REMS TA Center.** In this archived Webinar, presenters discuss how schools and school districts can take a more comprehensive approach to emergency preparedness by addressing the five mission areas of prevention, protection, mitigation, response, and recovery. Using examples from frequently asked questions about topics including threat assessments, earthquake preparedness, and adult sexual misconduct, the presenters discuss strategies to build capacity in critical functions.
<http://rem.ed.gov/PreparednessMissionsForSchoolEmerg.aspx>
- **Designing Safe Schools: Planning and Retrofitting for Safety in Education Facilities Webinar, REMS TA Center.** The presenters in this archived Webinar share their knowledge about recommended safety considerations for the design and construction of new school buildings, as well as improvements to existing facilities. Also, information is presented on identifying the most common construction and retrofits for school safety, discussing cost-effective options for improving safety and security in school buildings, recognizing various types of site assessments, and taking action to resolve safety concerns in educational facilities.
<http://rem.ed.gov/DesignSafeSchoolPlanning.aspx>
- **Safer, Stronger, Smarter: A Guide to Improving School Natural Hazard Safety, Federal Emergency Management Agency.** This guidance can help schools develop a comprehensive strategy to address hazards. Information is presented on topics such as how to identify hazards that could impact a school, how to make new and existing buildings safer for the whole school community, and how to respond and recover from emergencies.
<https://www.fema.gov/media-library/assets/documents/132592>