

# Chapter 6 - Schools and Education (EDUC)

**COMMITMENT:** Safe and disaster-resistant school, education, and childcare-related facilities are critical to the safety of our children, as well as to the quality of life of Bay Area families.

## Are Schools Safe?

There are over 2,000 K-12 schools in the Bay Area, along with 80 colleges and universities and numerous day care providers and pre-schools.

As a result of the 1933 Long Beach earthquake, in which 70 schools were destroyed and another 120 suffered major structural damage, California adopted the Field Act.



**School damaged in the 1933 Long Beach earthquake**

“The Field Act requires that the building designs be based on high level building standards adopted by the state and plans and specifications be prepared by competent designers qualified by state registration. The quality of construction was to be enforced through independent plan review and independent inspection. Finally, the design professionals, independent inspector and the contractor had to verify under penalty of perjury that the building was constructed according to the approved plans” (Dennis Bellet, Department of General Services, Division of the State Architect).

The first problem with the Field Act is that it applies only to new construction; not to existing pre-1933 school buildings. While the 1939 Garrison Act covered the criteria for continued use or abandonment of these pre-1933 school buildings, they were not retrofitted to conform to current codes until funding was made available shortly after the 1971 San Fernando Earthquake.

The second problem is that the Act is not retroactive. Many schools do not meet current codes. School districts and the Division of the State Architect are now grappling with the problem of evaluating and retrofitting thousands of school buildings constructed before 1976 (due to major changes in building codes following the 1971 San Fernando earthquake).

A third problem is that this Act has gaps; it does not cover private schools, pre-schools, and day care facilities. Many of these facilities needed to be retrofitted to withstand shaking.

## Role of Schools Before and After Disasters

Our schools are critical to our ability to recover following an earthquake or other major disaster in the Bay Area. While their principal mission prior to a disaster is education – whether they are a K-12 school or a university – their mission is more complex after a disaster hits.

- We rely on K-12 schools to shelter those displaced from their homes.
- We use K-12 schools as conduits for information to parents and others in the community, including post-disaster information.
- Some have suggested that schools become locations for distribution of water and other services after a disaster.
- Parents who work are relying on their younger children attending school and after-school programs as day care while they work, a role that is disrupted if schools close for extended periods of time.
- Children and teens need the stability of school and sports programs to restore a sense of normalcy, at the same time as gyms and auditoriums are used as shelters.
- Our universities are a major employer and driver of the Bay Area economy and thus their continued post-disaster functioning is critical to regional recovery.

Local county offices of education, school personnel, the American Red Cross, and various state agencies need to work together to ensure that we speed up the long-term recovery process so that schools can return to their mission of education. (Long-term recovery is that period from a few hours to several years after the disaster when buildings, infrastructure, and communities are rebuilt.)

**Emergency sheltering in school gym**



## Local Government Actions to Mitigate Natural Hazards

The following recommendations for action, if adopted by school districts, in conjunction with county offices of education, various state agencies and the American Red Cross, will help ensure safe school facilities for students, emergency shelters, and communities.

The recommendations have been developed with the goals of encouraging mitigation and disaster preparedness before disasters, as well as to speed up long-term recovery after disasters. The recommendation focus on creating safer facilities, working with private, as well as public, schools, and speeding up post-disaster structural inspection of school facilities.

The exposure of Bay Area public school facilities to earthquake shaking is the greatest hazard, with **97.3%** of schools exposed to high shaking levels (peak accelerations of greater than 40% of gravity [g] with a 10% chance of being exceeded in the next 50 years) as compared to **93%** of housing), and **67.9%** being exposed to extremely high shaking levels (60% g) as compared to **53%** of housing). Thus, most of the hazard mitigation strategies that follow deal with this hazard.

Local governments have not imposed retrofit requirements on private schools, pre-schools, and day care facilities. While this type of action might occur in the future, it is not something that is a moderate or higher priority in the next five years for inclusion in this MJ-LHMP.

Wildland-urban-interface fire threat (WUI) exposure is much less. While **47.4%** of public school facilities are located in WUI areas (as compared to **58%** of housing), only **4.5%** of all WUI areas have burned in the past 130 years. Even though global warming may result in more fires in the next 50 years, the exposure is still less than that of earthquake shaking. In addition, **1.0%** public school facilities are located in areas of extreme or very high wildfire threat (versus **9%** of housing)

The exposure to storm-related hazards is even smaller. Only **2.5%** of public school facilities are located in 100-year flood areas (as compared to **4%** of housing), and only **1.9%** of public school facilities are located in areas of significant past landslides (versus **10%** of housing).

## ACTIONS FOCUSING ON EDUCATION FACILITIES OWNED BY SCHOOL DISTRICTS

The State of California has the lead in strengthening public schools. However, the following strategies focus on ensuring these State efforts are coordinated with counties. While work on these actions is largely on-going, the efforts are often underfunded, particularly in the economic climate of a recession.

<i>Strategy</i>	<i>Regional Priority</i>	<i>Responsible Agency</i>
<b>1–(Strategy EDUC a-1):</b> Assess the vulnerability of critical public education facilities to damage in natural disasters and make recommendations for appropriate mitigation.	Existing program, underfunded	School districts, county offices of education, Div. of State Architect
<b>2–(a-2):</b> Retrofit or replace critical public education facilities that are shown to be vulnerable to damage in natural disasters.	Existing program, underfunded	School districts, county offices of education, Div. of State Architect
<b>3–(a-3):</b> Conduct comprehensive programs to identify and mitigate problems with facility contents, architectural components, and equipment that will prevent critical public education buildings from being functional after major disasters.	Existing program, underfunded	School districts, county offices of education, Div. of State Architect

<b>4-(a-4):</b> As a secondary focus, assess the vulnerability of non-critical educational facilities (that is, those that do not house students) to damage in natural disasters based on occupancy and structural type, make recommendations on priorities for structural improvements or occupancy reductions, and identify potential funding mechanisms.	Moderate	School districts, county offices of education
<b>5-(a-5):</b> Assess the vulnerability of critical private education, pre-school, and day care facilities to damage in natural disasters and make recommendations for appropriate mitigation.	Moderate	County offices of education
<b>6-(a-6):</b> Work with CalEMA and the Division of the State Architect to ensure that there will be an adequate group of Safety Assessment Program (SAP) inspectors trained and deployed by CalEMA to schools for post-disaster inspection. In addition, if a school district is uncomfortable with delays in inspection due to too few SAP inspectors available in catastrophic disasters, formalized arrangements can also be created with those inspectors certified by the Division of the State Architect as construction inspectors to report to the district, assess damage, and determine if the buildings can be reoccupied.	Existing program, underfunded	School districts, county offices of education, Div. of State Architect, CalEMA

## USE OF EDUCATIONAL FACILITIES AS EMERGENCY SHELTERS

As noted, schools have the additional function following a disaster of serving as emergency shelters. The following mitigation strategies focus on ensuring that they are available for that role.

<i>Strategy</i>	<i>Regional Priority</i>	<i>Responsible Agency</i>
<b>1-(b-1):</b> Work cooperatively with the American Red Cross, cities, counties, and non-profits to set up memoranda of understanding for use of education facilities as emergency shelters following disasters.	Existing program	School districts, county offices of education
<b>2-(b-2):</b> Work cooperatively to ensure that school district personnel and relevant staff understand and are trained that being designated by the American Red Cross or others as a potential emergency shelter does NOT mean that the school has had a hazard or structural evaluation to ensure that it can be used as a shelter following any specific disaster.	Existing program	School districts, county offices of education
<b>3-(b-3):</b> Work cooperatively to ensure that school district personnel understand and are trained that they are designated as disaster service workers and must remain at the school until released.	Existing program	School districts, county offices of education

## ACTIONS RELATED TO DISASTER PREPAREDNESS AND RECOVERY PLANNING

School districts cannot mitigate hazards, respond to disasters, or recover except as part of a larger community. The following strategies relate to the unique role of schools in the community.

<i>Strategy</i>	<i>Regional Priority</i>	<i>Responsible Agency</i>
<b>1-(c-1):</b> Encourage employees of schools to have family disaster plans and conduct mitigation activities in their own homes.	Existing program	School districts, county offices of education

<b>2-(c-2):</b> Develop plans, in conjunction with fire jurisdictions, for evacuation or sheltering in place of school children during periods of high fire danger, thereby recognizing that overloading of streets near schools by parents attempting to pick up their children during these periods can restrict access by fire personnel and equipment.	Existing program	School districts, county offices of education
<b>3-(c-3):</b> Offer the 20-hour basic CERT training to teachers and after-school personnel.	Existing program, underfunded	School districts, county offices of education
<b>4-(c-4):</b> Offer the 20-hour basic Student Emergency Response Training (SERT, rather than CERT) training to middle school and/or high school students as a part of the basic science or civics curriculum, as an after school club, or as a way to earn public service hours.	Existing program, underfunded	K-12 school districts, county offices of education
<b>5-(c-5):</b> Offer the 20-hour basic CERT training course through the Adult School system and/or through the Community College system (either using instructors with teaching credentials or by making facilities available for classes not run by school personnel themselves).	Existing program, underfunded	Community college school districts, county offices of education
<b>6-(c-6):</b> Develop and maintain the capacity for schools to take care of the students for the first 48 hours after a disaster, and notify parents that this capacity exists.	Existing program	School districts, county offices of education
<b>7-(c-7):</b> Develop a continuity of operations and disaster recovery plan using models such as that developed by the University of California Berkeley. (The American Red Cross has a role in promoting this activity, as well, in schools that they plan to use as shelters.)	High priority, actively looking for funding	School districts, county offices of education

## **ACTIONS RELATED TO SCHOOLS AS CONDUITS FOR INFORMATION TO FAMILIES ABOUT EMERGENCIES**

School districts have a role in assisting with the preparedness and recovery of that larger community. The following strategies relate to the unique role of schools in the community.

<i>Strategy</i>	<i>Regional Priority</i>	<i>Responsible Agency</i>
<b>1-(d-1):</b> Utilize the unique ability of schools to reach families through educational materials on hazards, mitigation, and preparedness, particularly after disasters and at the beginning of the school year. These efforts will not only make the entire community more disaster-resistant, but speed the return of schools from use as shelters to use as teaching facilities, particularly if coordinated with cities, counties, the American Red Cross and others.	Very high priority, unofficial program	School districts, county offices of education
<b>2-(d-2):</b> Develop and distribute culturally appropriate materials related to disaster mitigation and preparedness, such as those on the <a href="http://www.preparenow.org">http://www.preparenow.org</a> website.	Existing program	School districts, county offices of education