

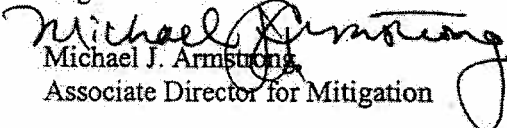


Federal Emergency Management Agency

Washington, D.C. 20472
SEP 1 2000

MEMORANDUM FOR: Robert Bissell, Director
Mitigation Division
FEMA Region VII

ATTN: FEMA Mitigation Division Directors,
Regions I – X

FROM: 
Michael J. Armstrong
Associate Director for Mitigation

SUBJECT: Standards for FEMA funding of high wind and tornado shelters and facility retrofits.

Thank you for the recent correspondence concerning the standards required for FEMA funding of high wind and tornado shelters and facility retrofits. Your staff wrote that applications are being considered involving retrofit modifications and shelter installations for thirty-eight school facilities in Reno County, Kansas. According to the information provided, the recommended retrofit improvements would enhance the tornado refuge area but may not provide “near absolute” protection.

This memorandum is intended to provide you with guidance on the two issues presented to us: First, whether FEMA mitigation funds could be used for improvements that will enhance protection against high wind and tornado events in an existing facility, but will not achieve near absolute protection. Second, if the facility improvements are required to meet cost effectiveness requirements.

Project applications requesting FEMA funding for high wind and tornado mitigation measures involving the installation or the enhancement of shelters and safe rooms must meet the criteria outlined in the “National Performance Criteria for Tornado Shelters,” and in FEMA 361, “Design and Construction of Community Shelters”. These standards were carefully designed by FEMA, in partnership with leading wind engineers and a steering committee of Red Cross and Building Officials, to provide for “near absolute protection.” If a retrofit or installation of a refuge area is attempted for a lesser wind event or for a lower threshold of protection, lives are being exposed to a greater degree of risk than is acceptable. I have determined that eligible hazard mitigation projects for storm shelters or safe rooms must meet the standards necessary to provide the best possible protection for human lives.

In addition, improvements to refuge areas funded under the Hazard Mitigation Grant Program must be determined to be cost effective. The benefit-cost software provided with FEMA 361 will assist you in making this determination.

It may be of some assistance to applicants to know that experience shows that refuge areas become much more cost-effective when designed and constructed as part of a multi-purpose room. The incremental cost of constructing a safe room can be relatively low. In this case, the facilities in question are school buildings. Since most school buildings need additional space, the most advantageous approach for the applicant may be to install an additional multi-purpose room, which can provide "near absolute protection" as opposed to using an existing space with a lower level of protection.

I hope that this information will allow you to better assist the applicant in developing the most effective mitigation measures for the safety of their community. If you have any questions, please feel free to contact Robert F. Shea, Director, Program Support Division, at (202) 646-3619. We will be sending a memorandum with general guidance to all regions as well.