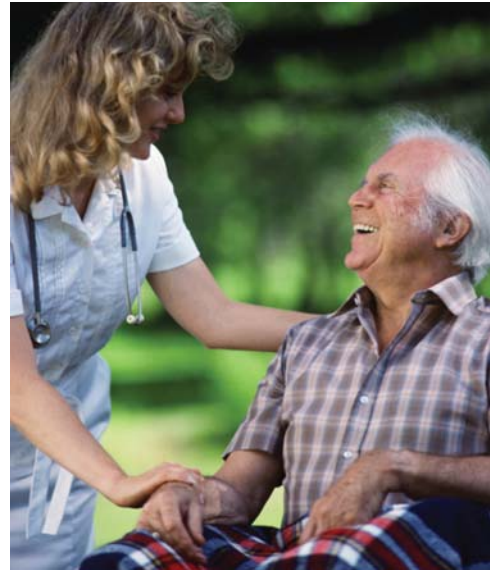


Including Persons with Disabilities in Disaster Mitigation Planning



by Kimberly Paarlberg, RA, ICC Senior Staff Architect

Natural disasters come in many forms: floods, storms with high winds (including hurricanes and tornadoes), wildfires and earthquakes, to name just a few. Building and fire safety codes include requirements that can greatly help mitigate the effects of a disaster. However, codes and regulations are not effective in isolation. Communities and individuals are a major part of the equation in that they can decrease the impact of a disaster by taking steps to prepare before an event occurs; address what will happen during the emergency; and plan for recovery efforts—getting people back in their homes and to work, making the community viable again.

The Codes

The adoption and enforcement of up-to-date safety codes results in buildings that are designed and constructed to better withstand the impacts of disasters, which is not only a critical part of preparation but contributes to an expedited recovery process. The *International Codes* include the following requirements based on anticipated risk.

Floods

Many do not realize that floods are the most expensive natural disasters in terms of loss of life, cost of damages and duration. For example, the Midwest floods of 1993 started from snow melting in April and continued through August. Also, floods may occur repeatedly—parts of the Midwest have been declared disaster areas due to flooding three times in the last 18 months.

Several of the *International Codes* include provisions for the flood-resistant construction of new buildings and reconstruction after a flood. These include mitigating measures such as elevating living spaces above anticipated flood levels; using water-resistant materials; designing for water infiltration; and designing for loads from flood water, waves and debris. Additional technical information is referenced in American Society of Civil Engineers (ASCE) 24, *Flood Resistant Design*

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and Construction. By adoption of *International Building Code (IBC) Appendix G, Flood-Resistant Construction*, a jurisdiction can fulfill National Flood Insurance Program floodplain management and administration requirements. The Federal Emergency Management Agency (FEMA) continues to work with ICC to coordinate code requirements with federal requirements.

Storm Shelters

Having a safe place to wait out a storm can be a lifesaver during tornadoes and hurricanes. ICC/National Storm Shelter Association (NSSA) 500, *Standard on the Design and Construction of Storm Shelters*, provides design, construction, and performance regulations for community shelters and residential safe rooms, including information on wind loading and size requirements based on location and anticipated users. ICC worked with FEMA as well as NSSA in the development of these requirements.

High Winds

The I-Codes include other provisions for structures located in hurricane- and other high-wind-prone regions. ICC 600, *Standard for Residential Construction in High Wind Regions*—which will specify prescriptive methodologies of wind-resistant design and construction details for residential buildings sited in high wind regions—is in the final stages of completion and expected to be available this fall.

Wildfires

Wildfires, which can not only devastate huge swaths of undeveloped areas but threaten adjacent homes and even entire neighborhoods, are becoming increasingly more common in the western U.S. The *International*

Wildland-Urban Interface Code (IWUIC), provides regulations for mitigating the hazards of wildfires where structures and other human developments meet or intermingle with wildlands.

The IWUIC's requirements are based on data collected from tests and fire incidents, technical reports, and mitigation strategies from around the world. Its provisions are intended to mitigate the risk to life and structures from wildfires (including related concerns such as the potential for post-event erosion and landslides) relative to the level of hazard present, as well as the spread of building fires to surrounding vegetation.

Earthquakes

Unlike storms and wildfires, earthquakes strike with no warning whatsoever. To reduce the likelihood of people being hurt during an earthquake, the I-Codes include strict requirements for buildings constructed in areas subject to seismic activity. The codes establish the likelihood of a severe earthquake at a given site and assign a seismic design category based on this, the type of soil and the type of occupancy.

The IBC references ASCE 7, *Minimum Design Loads for Buildings and Other Structures*, for building design and construction requirements related to seismic loading. Based on this standard, structural design for buildings subject to seismic events must consider building movement as well as strength. Buildings assigned to higher seismic design categories are subject to stricter requirements and limitations than those assigned to lower seismic design categories.

Pre-Event Planning

Communities

In developing a community disaster preparedness plan, it is important to include considerations for persons with special needs such as those in hospitals, nursing homes, independent living centers, group homes and adult day care centers, as well as those who live independently but have impairments that limit their ability to evacuate on their own.

Local disability organizations can assist in identifying clientele that may require earlier warning or assistance with transportation, or have special medical needs. In planning, work with administrators of nursing homes, assisted living centers and group homes, and senior housing complexes. Also, engage with groups dealing with

Resources

American Red Cross: www.redcross.org

Federal Emergency Management Agency:
www.fema.gov

International Code Council: www.iccsafe.org

National Flood Insurance Program:
www.floodsmart.gov

National Organization on Disability: www.nod.org

U.S. Department of Justice Americans with
Disabilities Homepage: www.ada.gov

people in their homes such as hospice, home care and meals-on-wheels providers, and consider allowances for persons who may be temporarily disabled due to illness or injury, including those in long-term rehabilitation.

Utility companies maintain lists of local organizations that can provide life-sustaining equipment. Become familiar with those contacts and develop ways for the community emergency manager to communicate with them 24 hours a day via phone, email or controlled access websites. Create outreach programs to make these groups aware of disaster planning, including evacuation plans, and include them in any practice or simulation drills—experience demonstrates that people who are aware of evacuation procedures and have participated in drills are calmer, more efficient and more successful at following plans.

Displaced residents may need to remain in shelters for days or even weeks following a disaster, so practical planning is necessary. For example, school cafeterias make feeding large crowds easier but school buildings may not have adequate capacity for bathing needs (e.g., showers—including a transfer or roll-in shower for per-

sons with mobility impairments). Do not miss the opportunity to perform such evaluations during renovations to facilities that could serve as shelters. For more information on appropriate considerations consult the Department of Justice *ADA Checklist for Emergency Shelters*, available online from www.usdoj.gov/05publications/05_3_a.html.

Individuals

Organizations like FEMA, the American Red Cross and the National Organization on Disability include information on their websites for emergency preparedness (see the Resources box), and each recommends that everyone have Ready and Go Kits: a Ready Kit to allow individuals to survive for a couple of days on their own, and a Go Kit containing immediate necessities if they should need to leave their home. All individuals should also know where the utility shut-offs for their residences are located. Those who use medical equipment that requires electricity or have medication that needs to be refrigerated should investigate options for back-up power in case of an outage.

Last but not least, a family communication plan

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should be developed that includes an emergency contact person—preferably a relative or friend far enough away not to have been affected by the same disaster. Individuals with disabilities should create a network support group of family, friends, co-workers, personal attendants, etc., who can provide assistance during an emergency. Groups of at least three people who can help at each location where they spend a lot of time, such as home and work, are recommended.

During an Event

Communities

Communities should work with the Red Cross to evaluate all shelters in order to provide minimal levels of accessibility. “Special needs” shelters where those with medical issues can receive appropriate attention must be identified, and this information should be provided to both the general shelters and facilities that care for individuals needing additional assistance such as nursing homes, hospitals, group homes and in-home care service providers.

Staggered evacuation orders should be created to notify large care facilities ahead of the general population because their lead time is much longer. In addition, the provision of accessible transportation support should be coordinated for evacuees who need to bring along special equipment (e.g., wheelchairs, walkers, oxygen, etc.) or guide animals.

Individuals

Depending on the circumstances and nature of the emergency, the first important decision for individuals is whether to stay or go—and pre-planning is important for either. Sometimes it is advisable to stay at one’s current location, so a battery-powered radio should be on-hand in order to stay informed of the latest information, including evacuation notification. The ideal location for this is an above-ground interior room without windows. From there, disabled persons should contact their personal support network and keep everyone informed of their actions and any changes in their condition.

If the order comes for a mandatory evacuation or if there is reason to believe that any hazards resulting from the disaster pose a direct threat, leave immediately! One should never expect to be rescued by first responders at the height of an emergency. Those who require additional travel time or need transportation assistance

should make the necessary arrangements as far in advance as possible.

Service Animals

Although federal regulations allow service animals in shelters, their owners should be prepared to explain this to shelter staff. That said, the care of a service animal is the owner’s responsibility, so one should be sure to include enough dog food in his or her Go Kit to feed the animal for a couple of days.

After an Event

Recovery

For both health and safety reasons, one of the first essential steps in post-disaster recovery is immediate building inspections. Whenever possible, getting people with disabilities back into their accessible living arrangements can make a substantial difference to their quality of life because temporary accessible housing is often difficult to find.

Terry Berk, a Plans Examiner from Des Moines, Iowa, offers some suggestions based on what his community implemented during recent floods. If building officials were not able to gain access to a structure during walk-through inspections of affected areas, they left a “door knocker” indicating the need for an inspection along with contact information. All Building Department forms were also made available electronically, which was especially important because the department itself was displaced by the flood. In addition, the City Council passed an ordinance waiving building permit and inspection fees for those rebuilding from flood damage, which greatly encouraged compliance.

Lessons Learned

Disaster plans should be reevaluated after each event to review performance and periodically as situations change. For example, FEMA is currently reevaluating flood maps because new floodplain information may affect areas that had not been considered before. Similarly, plant regrowth should be monitored following wildfires to determine whether property maintenance ordinances need to be enforced.

Keep in mind that people relocate fairly often within and between regions, so keep that outreach program going—perhaps even make it part of an annual community development process. Determine what worked, what could have been better and revise the plans as needed. ♦