The Goals of Emergency Management to Reduce the Impact of Floods

The primary goal of FEMA is to mitigate the effects of floods. The principal approaches to this are summarized in the following: *Modify the flooding:* Adapt structural means to alter floodwaters (e.g., dams, levees, floodwalls, channel alterations, land treatment measures, and storm water management facilities).

Modify the susceptibility to flood damage: Avoid hazardous, uneconomic, or unwise use of floodplains. Implement this strategy through appropriate land use regulations, development and redevelopment policies, building codes, flood proofing, and disaster preparedness.

Modify the impact of flooding on individuals and the community: Focus on assisting individuals and communities to prepare for and recover from floods. Provide flood insurance, education and information dissemination, disaster assistance, and tax adjustments.

Modify the impact of human activities on floodplain resources: Focus on preserving, protecting, and restoring the natural and cultural resources and functions of floodplains. Biologically productive ecosystems, environmentally sensitive areas, and economically and historically important sites are often geographically coincident with floodplains.

Identifying Floodplains and the Need for Mitigation

In 1977 Flood Insurance Rate Maps (FIRMs) were implemented to assess insurance premiums. Since then approximately 21,000 communities have been mapped. Now FEMA produces and uses two types of maps to assess floods: the Flood Hazard Boundary Map (FHBM) and the FIRM. The FHBM is the map initially given to a community that identifies the special flood hazard areas within that community. The delineations on the FHBM are the best estimates of floodplains and are identified as “Zone A.” In coastal areas flood zones that are threatened by tidal waters are noted as “Zone V.” The FHBM is used as the official map. Owners of structures within Zones A or V have to purchase flood insurance.

The FIRM is issued after a community has enrolled in the NFIP and a detailed flood insurance study has been completed. This map uses a more detailed zoning method to indicate the detail with which the study was conducted and the risk of flooding. The insurance premium for buildings is based on the level of elevation of the first floor versus the base flood elevation. The first floor elevation for all practical purposes is the level of the foundation of a building (not the first habitable space).

FEMA recognizes the necessity of revising maps. To revise maps two types of letters of redetermination are used. These are the Letter of Map Revision (LOMR) and the Letter of Map Amendment (LOMA). A LOMR orders an official revision of a map and most commonly follows public improvements to an area, development, annexation, or technical corrections to zones. A LOMA is used to change the floodplain determination of a map. LOMAs are made primarily once scientific evidence indicates that the original map is no longer accurate. For example, because of new flood determination techniques, changes on the floodplain or watershed, or availability of new data, a LOMA would be needed. A LOMA can be used to change the requirements for flood insurance.

Currently the federal government prints about 6 million maps a year and has nearly 40 million in stock. With this large number of maps, long delays can occur between the time an area’s susceptibility to floods changes and the time a map can be updated. Many of the maps may be outdated and erroneous.

Sources of Information

FIRMs and FHBMs can be obtained from: Flood Map Distribution Center

6930 (A-F) San Toma Road Baltimore, MD 21227-6227

Phone: 800-333-1363 or from the state Department of Natural Resources (DNR) or local city or county area planning commission.

FEMA's approach to Floods

Mitigation against floods involves two principal aspects, avoiding building in floodplains and building to sufficient standards for protection. These principles apply to animal owners, veterinary practices, animal shelters, farms, and other facilities in the animal care community. Advocates for the care of animals can also work with local governments on the implementation of these measures. To accomplish effective flood mitigation a good understanding of the options is helpful. These are described in the following.

Proper land use management and strict enforcement of building codes are community responsibilities. Information about floodplain management can be obtained from local county governments. The NFIP is a federal program enabling and encouraging property owners to purchase flood insurance. Through the NFIP people can protect themselves from financial ruin caused by property loss from floods. Local property insurance agencies are usually well informed about flood insurance. Communities should also establish land use management practices to decrease the potential for damage from mudslides and dam failures.

Buildings should not be allowed in floodplains unless they are elevated and reinforced. If livestock or horses are grazed in floodplains, the owners should be prepared to move them to higher ground before low-lying evacuation routes become flooded.

Flood insurance

The NFIP was established in 1968 after a series of widespread and expensive floods. Initially it was a voluntary program, but because of low participation the Flood Disaster Protection Act was introduced in 1973. It required, as a condition for receiving any future federal disaster assistance, that all flood-prone states and communities join the NFIP and establish and implement adequate floodplain ordinances with effective enforcement procedures. These procedures had to be consistent with federal standards to reduce or avoid future flood losses. The NFIP also applies to areas affected by mudslides.

The Flood Disaster Protection Act determines that flood insurance is required if any of the following applies:

- Property is in a community that is enrolled in the NFIP.
- A FEMA map is in effect for the community.
- Improved real property is a security for a loan, or the subject of a federally insured or guaranteed loan is located in the FEMA-designated special flood hazard area.
- Property is financed through the federal government or a federally regulated lender.

Examples of federally related financial assistance are federal grants; Small Business Administration loans; Federal Housing Administration loans; Veterans Administration and Federal Housing Administration mortgages; and mortgages that are federally insured, regulated, or supervised, such as from banks that are insured through Federal Deposit Insurance

Corporation (FDIC) or Federal Savings and Loan Insurance Corporation (FSLIC) or regulated by the Federal Home Loan Bank Board, credit unions insured by the National Credit Union Administration, and banks regulated by the Comptroller of the Currency of the Federal Reserve Board.

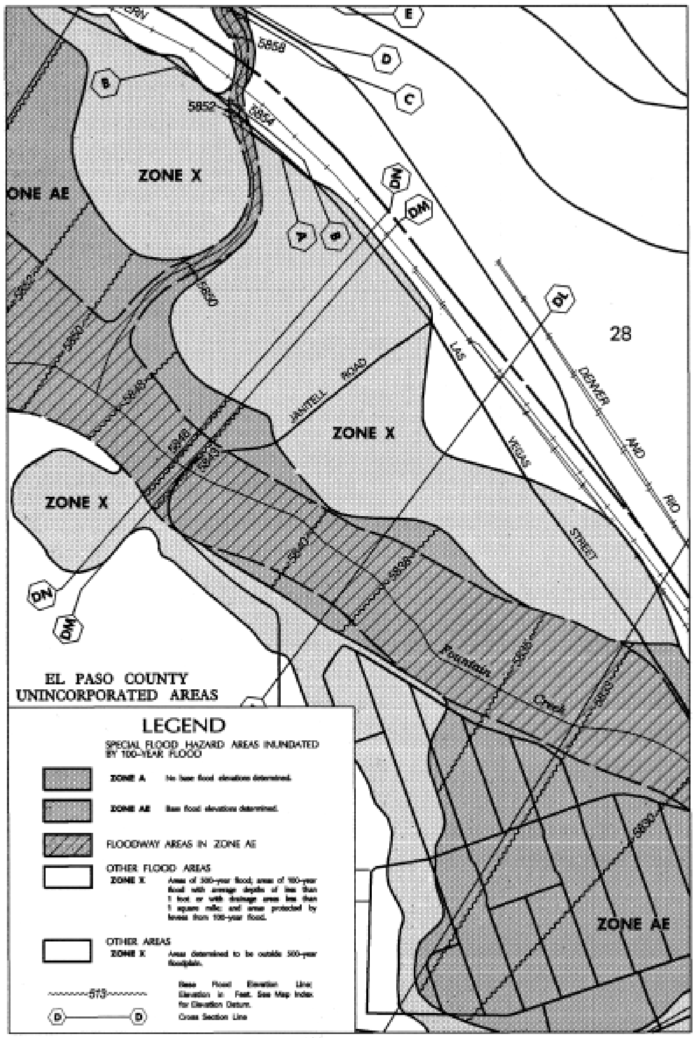

FIG. 7-5 An example of a FIRM panel for El Paso, Colorado, and incorporated area. *Zone AE,* 100-Year floodplain as determined by hydraulic models; *Zone A,* 100-year floodplain not determined by hydraulic model; *cross-hatched area,* floodway areas; *Zone X,* areas outside 500-year flood zone. (From Federal Emergency Management Agency: *Multi-hazard identification and risk assessment: a cornerstone of the national mitigation strategy,* Washington, DC, 1997, FEMA.)

The amount of flood insurance required by law is equal to the outstanding balance of a loan or the maximum required by law, whichever is less. In the emergency program the maximum amount of insurance available for a single-family dwelling is $35,000. In the regular program the maximum amount is $185,000. For an insurance policyholder to be eligible for full replacement cost coverage, the amount of insurance purchased has to equal 80% of the value of the insured building or the maximum available under the program, whichever is less. These rates apply only to an insured's principal residence, defined as where the insured has lived for 80% of the year or 80% of the period of ownership if less than a year. They do not apply to mobile homes. The lender is responsible for ensuring adequate coverage. The standard deductible is $500.

In some cases FEMA prefers to buy out owners of floodprone property because this may be less expensive than having to rescue and rebuild multiple times. The buyout procedure requires two calculations. The value of the property before the flood has to be determined, and that value must be compared with the amount it would cost to repair the building. If the repair costs are more than 50% of the estimated value of the property, the building becomes a candidate for buyout.

Elevating a structure does not qualify a property for exemption from the NFIP because it is the lowest point (foundation) of the house that determines whether a house is in the floodplain or not. The state DNR can advise landowners on ways to make their property less prone to flooding without displacing the water to other properties. Floodplains should not be changed without the prior consent of the DNR.

Regrettably, participation in the NFIP has remained low. Often no more than 20% to 30% of the insurable buildings in identified flood hazard zones are covered. In addition, for those that are insured there are often discrepancies in rates between those paying actuarial rates (current insurance premiums), which apply to buildings that were constructed after 1973, and those whose premiums are subsidized for their pre-1973 buildings.

Studies on why poor compliance has been common despite the federal mandate for insurance identified the following as some of the reasons:

- The federal government continued to offer extensive disaster assistance funding even to property owners who were not insured.
- Flood insurance could be purchased with only a 5-day waiting period. For cresting floods, people would wait until they were sure the flooding was going to affect them.
- Mortgage lenders were not diligent in requiring flood insurance on new mortgages or in enforcing annual renewals.
- Approximately 25% of houses were owned outright, and for these owners flood insurance is still voluntary.
- Insurance requirements can be enforced only if a loan is backed through federal resources.
- There appears to be a lack of knowledge about the program among policyholders.
- Often property owners who live in floodplains have low incomes and cannot afford the insurance premiums.