

Section 7. Post-Flood Mitigation

The days and weeks following a flood offer a unique opportunity for flood hazard mitigation, i.e., for taking steps that will reduce the community's vulnerability to damage from the next flood. Once the immediate response efforts and damage assessments are completed, the Village should prepare a post-flood plan for reconstruction and redevelopment of the flooded area. There are four reasons why this timing can be so productive:

1. A flood will bring federal, state, and regional people from various agencies and fields together to focus their attention on the Village and its flood problems.
2. The residents and elected officials will be more interested and more willing to spend time on the Village's flood problems and to try some new solutions.
3. If the damage was severe enough, it may be relatively easy to clear out a destroyed area and start anew.
4. If the damage was severe enough to warrant a major disaster declaration, there will be several different sources of money to buy or rebuild properties so that they will be protected from flood damage.

This section reviews the procedures that should be followed by the Village and the opportunities that can arise following a flood. It can only introduce the topic. More detailed planning and memorandums of agreement are recommended to better prepare for the fast moving post-flood scene.

7.1 Post-Flood Procedures

7.1.1 Federal and State Procedures: Once the Illinois Emergency Management Agency (IEMA) and the Federal Emergency Management Agency (FEMA) are satisfied that the threat to life and property has subsided, their attention turns to damage assessment. Damage assessment teams will be sent to the area to collect data needed to determine whether a disaster declaration should be made.

If the damage assessment teams' data show that the damage meets certain criteria and that a certain number of buildings were severely damaged and uninsured, then a disaster declaration may be forthcoming from the Small Business Administration or, in agricultural areas, from the U.S. Department of Agriculture. If the damage was assessed at being so severe that recovery is beyond the normal capabilities of the community and the state, then a Presidential Disaster Declaration will be requested through FEMA.

Once the declaration has been made, federal and state agencies go to work to bring disaster assistance to the community and the residents. The timetable for federal agencies is shown in Figure 7-1 on the next page.

Assistance to residents and businesses is processed through Disaster Application Centers (DACs) which are usually set up in local schools. Assistance to government and nonprofit agencies is called "public assistance." FEMA will call a meeting of eligible agencies to explain application procedures.

Figure 7-1 Federal Mitigation Timetable

<u>Activity</u>	<u>Federal Agencies</u>
Pre-disaster planning	FEMA
Disaster warning	National Weather Service, Corps of Engineers, U.S. Geological Survey
Disaster response	FEMA, Corps of Engineers, Coast Guard
Immediate recovery (1-10 days after disaster)	Corps of Engineers, Red Cross, and as many as 15 other agencies under the Federal Response Plan
Preliminary damage assessment (1-10 days after disaster)	FEMA, agencies with technical expertise (Corps, Dept of Education, Federal Highway Administration, etc.), Small Business Administration (SBA)
Disaster declaration (1-21 days after disaster)	FEMA, SBA, Dept of Agriculture
Disaster assistance (within 4 days of declaration)	Public assistance: FEMA, Dept of Education, Federal Highway Administration, Corps of Engineers Individual assistance: FEMA, SBA, Farmers Home Administration, Internal Revenue Service, Dept of Labor, Red Cross
Federal mitigation planning (within 15 days of declaration)	Interagency Hazard Mitigation Team
Hazard Mitigation Grant Program (HMGP) letter of intent (within 60 days of declaration)	FEMA
State mitigation planning (within 180 days of declaration)	FEMA (State 409 plan)
HMGP project proposal (within 90 days of 409 plan approval)	FEMA
Redevelopment	
Pre-disaster planning	FEMA

From a floodplain management perspective, the activities of the state and federal mitigation staffs are very important. A federal-state interagency hazard mitigation team will visit the area to identify mitigation opportunities and issues. The team must prepare a report within 15 days of the presidential disaster declaration. The report will guide federal assistance programs and may set priorities for mitigation assistance.

The state must prepare a mitigation plan within six months of the declaration. The plan is known as the “409 plan” after Section 409 of the Stafford Act. The state's plan will have an impact

similar to the 15 day report. One of the major sources of mitigation funds is the Hazard Mitigation Grant Program (HMGP), also known as “404 money” after Section 404 of the Stafford Act. HMGP is administered by IEMA and the state's mitigation plan will set priorities for HMGP funding.

In short, there will be both disaster assistance to help residents, businesses, government agencies, and nonprofit organizations repair and recover and mitigation assistance to help protect people and property from future floods. Mitigation plans will be quickly prepared to guide the mitigation assistance programs. The community that participates in the planning process will be better able to make the mitigation programs respond to its needs.

7.1.2 Village Procedures: The Village of South Holland should appoint a hazard mitigation coordinator to work with the federal and state mitigation efforts and to develop the Village's post-flood mitigation plan. The success of the post-flood plan will rest largely on the skills and knowledge of the mitigation coordinator. Appointment of this person should not wait for a flood because there are several courses on mitigation available through IEMA and FEMA and other advance preparations that should be made.

The mitigation coordinator should contact the interagency mitigation team through IEMA and FEMA channels. He or she should offer to host a tour of the flooded area. A prepared list of local damage and mitigation needs would be very helpful.

If possible, the mitigation coordinator should try to attend the team's meeting after the tour. A local person's presence may be appreciated by the federal and state staff who probably have little knowledge of the area and may not have been called in until after the disaster declaration.

While the federal and state staffs are reviewing potential assistance programs, the Village should proceed to implement the four parts of a post-flood plan:

1. Assist in clean up and repairs,
2. Regulate reconstruction to ensure that the floodplain management ordinance's provisions are being met,
3. Provide information to the public on floodproofing, property protection and other mitigation measures, and
4. Assist in providing financial assistance for floodproofing, property protection and other mitigation measures.

These four components should be assigned to Village staff before a flood occurs. Normally the ESDA coordinator handles clean up and the Code Enforcement Office is responsible for regulating reconstruction. Public information should be disseminated through the Public Relations Director.

The mitigation coordinator is responsible for coordinating these efforts and those of federal and state agencies. As most, if not all, financial assistance will come from federal and state sources, the mitigation coordinator should be responsible for financial assistance arrangements.

The rest of this section covers these four components of post-flood mitigation. It is important that the efforts of the responsible staff be coordinated and mutually supportive. At the very least, the responsible people should meet daily to advise each other of their operations. Incorporating the above procedures into the Village's "Flood Warning and Response System" would formalize the duties and responsibilities.

7.2 Clean Up and Repairs

Clean up and basic repairs to prevent further damage can proceed without a floodplain permit. Basic repairs to prevent further damage include patching the walls and roof to prevent rain damage and shoring up a broken foundation to prevent collapse. However, residents must be advised that reconstruction, such as replacing drywall or windows requires a permit. The permit requirements are discussed in Section 7.3 Reconstruction Regulations.

Other clean up and repair activities by the Village include:

- Check streets and bridges to make sure that traffic will not damage them.
- Clean the streets to allow residents and clean up vehicles to travel safely.
- Check the water system to see if it lost pressure or got contaminated. If so, a boil order may need to be issued or the Village may have to import potable water for drinking.
- Inspect buildings to make sure that they are safe before residents reenter them. Electricity and gas should be turned off until deemed safe by the permit office or the utility company.
- Distribute information on clean up and post-flood safety. This is covered more in Section 7.4 Public Information.
- Inspect flooded areas for garbage piles, standing water which could breed mosquitoes, and other potential health hazards.
- Arrange for dumpsters to be placed on each block and/or for more frequent garbage collection.
- Coordinate clean up and repair assistance that may be available from the Red Cross, church groups or volunteers.

7.3 Reconstruction Regulations

As explained in Section 6.2, the Code Enforcement Office must require a permit for all development in the floodplain. Development includes reconstruction, repairs, alterations, modifications, or demolition of existing buildings (Section 14-22 of South Holland's Municipal Code). In other words, a permit is needed for each building that will be repaired with new or replacement drywall, flooring, foundation walls, furnace, water heater, etc.

The objective of this requirement is to determine if the building was substantially damaged. Substantial damage occurs when structures are

“...damaged whereby the cost of restoring the structure to its predamaged condition would equal or exceed fifty (50) percent of the market value of the building before the damage occurred, regardless of the actual repair work performed.” (Section 14-22)

Because the requirements are based on the true cost of returning the building to its pre-damage condition, the rules must be met regardless of how much it may cost the owner to make repairs.

It is important to note that the latest amendment to South Holland's ordinance makes substantial improvements cumulative. That means that if there were other modifications, alterations, or repairs to the building since April 1, 1990, the cost of those projects must be added to the cost of repairs. If all of them combined total 50% or more, then the building is considered to be substantially damaged.

The Village's ordinance (and the federal regulations) treat a substantially damaged building the same as a new building. This means:

- A substantially damaged building in the floodway must be relocated out of the floodway,
- A substantially damaged residential building in the flood fringe must be elevated above the flood protection elevation or relocated out of the floodplain,
- A substantially damaged nonresidential building must be elevated, floodproofed or relocated out of the floodplain.

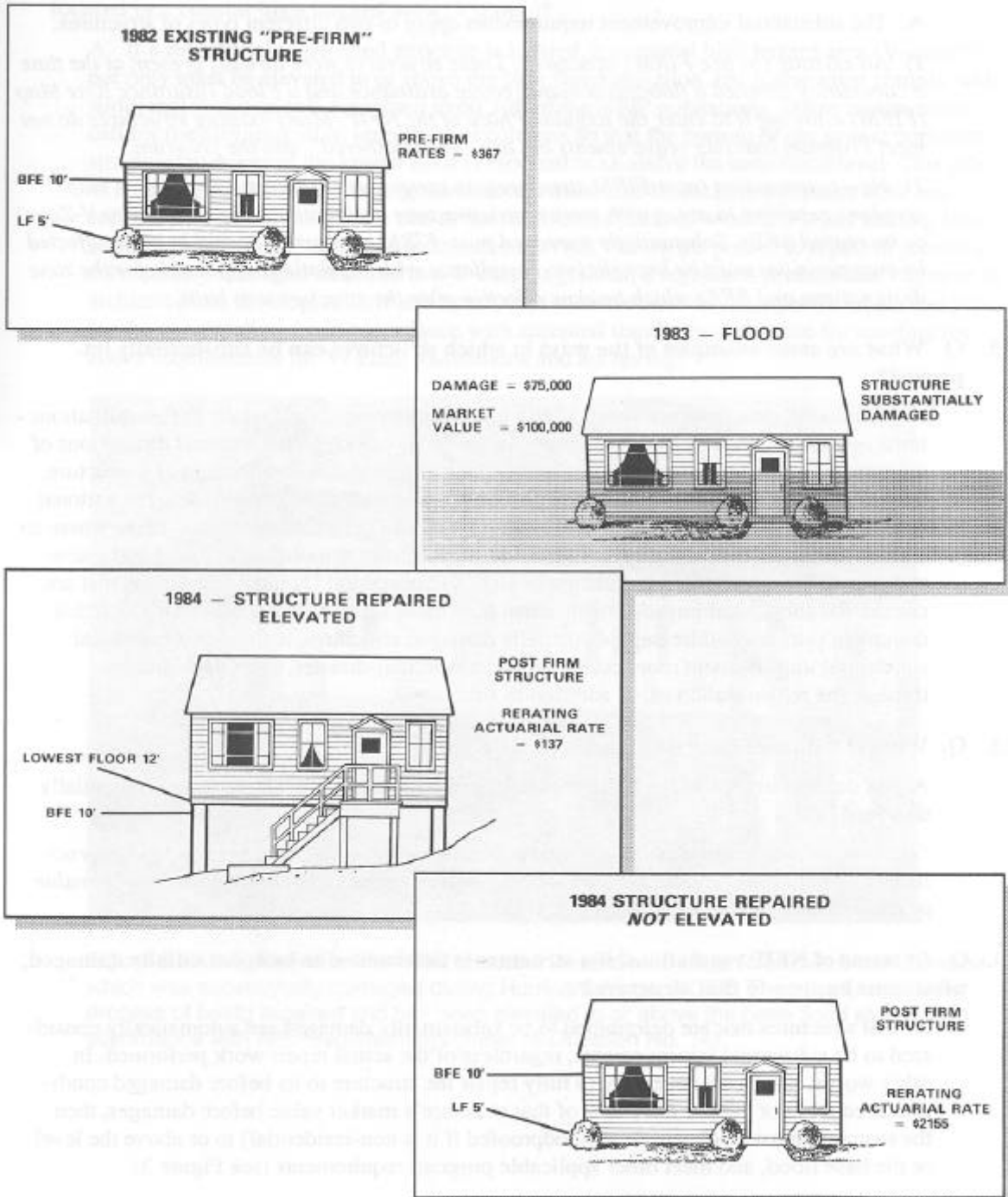
A substantially damaged building is also treated as a new building for flood insurance rating purposes. Its flood insurance premium is based on actuarial or “post-FIRM” rates. If it is elevated, the premium will be lower than for a “pre-FIRM” building. If it is not elevated, the premium can be several thousand dollars per year. Figure 7-2 on the next page summarizes the implications on flood insurance rates.

Details on enforcement of the requirement are spelled out in FEMA's [Answers to Questions About Substantially Damaged Buildings](#). FEMA can be expected to closely watch the Village's enforcement of the substantial damage requirement to ensure that the Village is upholding its agreement with the National Flood Insurance Program.

The Code Enforcement Office should ensure compliance by taking the following steps:

- Contact FEMA or the Division of Water Resources to obtain the latest information about the requirement. For example, following Hurricane Andrew and the Mississippi River floods, FEMA modified the rules to allow communities to use replacement cost rather than market value.
- Develop permit application forms that include the full cost of repairs. Sample forms can be available from FEMA.

Figure 7-2 Impact of the Substantial Damage Rule on Flood Insurance Rates



Source: Answers to Questions About Substantially Damaged Buildings

- Conduct a windshield survey of the flooded area and identify potentially substantially damaged buildings. These include buildings with collapsed basement walls, broken foundation walls, or a high water line of four feet or more over the first floor.
- Send a written notice to the owners of the identified buildings and advise them of the substantial damage rule.
- Mark and record high water marks during the windshield survey. It will provide helpful information for the mitigation planners and in reviewing repair estimates submitted with permit applications.

The impact of this requirement on a property owner who may have just lost all of his or her possessions and suffered building damage can be severe. Accordingly, the enforcement of the substantial damage rule needs to be closely coordinated with the public information activities and financial assistance, as discussed in Sections 7.4 and 7.5. If done properly, the regulatory requirement coupled with a knowledgeable owner and financial assistance can result in protecting many buildings from future flooding.

7.4 Public Information

Whether they are substantially damaged or not, most buildings will benefit from incorporating floodproofing and other mitigation measures during repairs or reconstruction. It is important to advise residents on how to do this. The Public Relations Director should disseminate information through the following approaches:

- Handouts delivered door to door,
- Posters and handouts at DACs, Red Cross vehicles, Code Enforcement Office, etc.,
- Distributing copies of FEMA's new manual Repairing Your Flooded Home,
- News releases, and
- Public meetings and open houses.

The messages can be tailored to the media, but they should include the following information:

- Post-flood safety information, such as turning off the electricity,
- Health and mental health precautions,
- Clean up and repair advice,
- How to dispose of garbage and debris,
- The requirement to obtain a permit before reconstruction,
- Property protection measures,
- How to handle an insurance claim,
- Dealing with repair contractors,
- Sources of assistance and how to apply, and
- What the Village is doing to reduce flood damage in the future.

Two media cover most parts of this message. Repairing Your Flooded Home is available in large quantities from FEMA or the Red Cross. As a national publication, some of it is not pertinent to South Holland. The Village may want to reprint appropriate parts of it with a Village cover in order to have an adequate supply on hand before the flood.

The other comprehensive media is an open house. It has the advantages of being quick to implement, inexpensive to administer, and flexible to meet the needs of floodprone property owners. Open houses are described in more detail in Section 4.9.6. The format can be modified to meet the needs of the residents or the time available.

7.5 Financial Assistance

Many flood mitigation measures can be implemented as part of repairs or are otherwise inexpensive. These include replacing a flood damaged furnace in the basement with a new one on a higher floor and leaving a gap at the bottom of the wall (covered by the baseboard) so future floodwaters will quickly drain out of the wall cavities.

However, some projects, such as overhead sewers and backup valves, can cost \$3,000 - \$5,000. Elevating a building can cost \$20,000 - \$30,000. If a substantially damaged building has to be relocated out of the floodway, the cost to the owner can be even higher.

Implementing these mitigation projects and enforcing the substantial damage rule are mutually dependent. If the funds are available, most flooded property owners will prefer the mitigation approaches to avoid future damage. In some cases, residents will want to be declared substantially damaged in order to take advantage of a mitigation funding program that is only available if the project is required by ordinance. This can even include selling the property to the Village or another government agency and permanently relocating out of the floodplain.

Therefore, it is incumbent on the Village's mitigation coordinator to locate and publicize sources of financial assistance. He or she should talk to the state and FEMA mitigation officers to get the latest information on program requirements and availability. Figure 7-3 lists possible programs and how they can be of help.

7.6 Conclusions and Recommendations

7.6.1 Conclusions:

- a. The post-flood period can be very trying on South Holland's residents and Village staff. It will be particularly difficult to enforce the substantial damage rule when property owners are strapped for funds to repair, rebuild and replace their belongings.
- b. The post-flood period can also be a prime time to take advantage of opportunities for floodproofing and redevelopment of the floodplain. A variety of funding programs are available after a disaster declaration, some of them keyed to helping people comply with the substantial damage rule.

Figure 7-3 Post-Disaster Financial Assistance Programs

Flood insurance

Administered by: Insurance companies (overseen by FEMA)
Purpose: Provide insurance coverage for properties subject to surface water flooding
Type of assistance: Insurance claim payment
Amount available: Single family house: up to \$185,000 on the structure, up to \$60,000 on the contents
Who qualifies: People who buy flood insurance
Application: Contact insurance agent who arranges for an adjuster

Private Sector Basement Flooding Insurance

Administered by: Insurance companies
Purpose: Provide insurance coverage for buildings subject to sump pump failure or sewer back up
Type of assistance: Insurance claim payment
Amount available: Varies
Who qualifies: People who buy appropriate insurance
Application: Contact insurance agent who arranges for an adjuster

Section 1362

Administered by: Federal Emergency Management Agency
Purpose: Purchase substantially or repetitively damaged properties to reduce future flood insurance claim payments
Type of assistance: Property is purchased at pre-flood value
Amount available: Full cost of acquiring a property, minus insurance claim already paid
Who qualifies: Only owners of substantially or repetitively damaged properties who were insured before the flood
Application: Owners complete forms but community applies on behalf of all interested parties. Community must agree to clear all lots within 90 days and maintain the land as open space forever. Note: Rules may be changed under pending federal legislation

SBA Disaster Loan

Administered by: Small Business Administration (SBA)
Purpose: To help people rebuild and recover after a disaster
Type of assistance: Loan of 4% or 8%, depending on financial condition. Eligible expenses include repairs and reconstruction, refinancing an existing mortgage, bringing a building up to current codes, and installing mitigation measures (limited to 20% over the amount of the loan).
Amount available: Up to \$100,000 per house
Who qualifies: Homeowners and businesses (including landlords) with the ability to repay the loan
Application: Requires Presidential or SBA disaster declaration, apply at the DAC or via the assistance hotline

Temporary Housing and Limited Home Repairs (LHR)

Administered by: Federal Emergency Management Agency
Purpose: Provide housing for those made homeless by the disaster
Type of assistance: Housing payments for up to 18 months. Pays contractors and related expenses to make minor repairs needed to make a home liveable. Temporary Housing can be used to house people waiting for funding to bring a substantially damaged building up to code.
Amount available: As needed to pay local housing expenses
Who qualifies: Residents of a declared county made homeless by the disaster; no income requirements
Application: Requires Presidential disaster declaration, apply at the DAC or via the assistance hotline

Figure 7-3 Post-Disaster Financial Assistance Programs (Continued)

Individual & Family Grant (IFG)

Administered by: Illinois Department of Public Aid
Purpose: Help people with unmet needs from the disaster. The “minimization plan” will fund minor floodproofing projects, such as relocating furnaces.
Type of assistance: Grant
Amount available: Up to \$11,000
Who qualifies: People who cannot qualify for an SBA loan or cannot cover disaster expenses, including minor floodproofing
Application: Requires Presidential disaster declaration
Apply at the DAC or via the hotline within 60 days of the disaster declaration

Public Assistance mitigation funding

Administered by: Federal Emergency Management Agency
Purpose: To fund appropriate mitigation measures as part of reconstruction of damaged facilities
Type of assistance: 75% federal grant
Amount available: Varies
Who qualifies: Agencies and non-profit organizations receiving disaster assistance for restoring public facilities
Application: Included in public assistance application

Hazard Mitigation Grant Program (HMGP or 404)

Administered by: Illinois Emergency Management Agency
Purpose: To support post-disaster mitigation programs
Type of assistance: 50-50 grant to community which may provide grants or loans to individuals. Non-federal share could be borne by property owner
Amount available: Federal share: 10% of the estimated public assistance funding for restoration projects
Who qualifies: Communities in counties that received Presidential disaster declaration for public assistance
Application: The community applies to the state and establishes its own procedures for disbursing the funds

Red Cross Assistance

Administered by: American Red Cross
Purpose: Help disaster victims meet immediate needs
Type of assistance: Shelter, clothing, groceries, etc. Can include funds for reconstruction if there is no other source of assistance
Amount available: Depends on person's immediate needs
Who qualifies: Anyone
Application: AT DAC or local Red Cross chapter

Flood Relief Fund

Administered by: Local churches or ad hoc committee
Purpose: To help disaster victims
Type of assistance: Gifts, donations of food, money
Amount available: Varies
Who qualifies: Up to administering agency
Application: Up to administering agency

7.6.2 Recommendations:

- a. The Village should appoint a flood hazard mitigation coordinator as soon as possible. The flood assistance coordinator would be an appropriate person for this position (see the Recommendations in Section 4, page 4-28).

In 1997, the Flood Liaison Committee adopted the *Post-Flood Mitigation Procedures*. The Flood Assistance Coordinator was named responsible for “monitoring the implementation of these procedures, evaluating their effectiveness, and recommending changes.”

- b. The hazard mitigation coordinator should attend training provided by IEMA and/or FEMA and become familiar with post-flood procedures, clean up and repairs, reconstruction regulations, public information activities, and sources of financial assistance.

The Flood Assistance Coordinator has added training and conferences where some of these topics are addressed. There is no training specifically for post-flood mitigation.

- c. The hazard mitigation coordinator should develop a post-flood hazard mitigation plan to provide the Village with an aggressive recovery, reconstruction regulation, and public information program to minimize the difficulties during recovery and maximize the opportunities and assistance for mitigation, including funding support for floodproofing or elevating buildings, acquiring flooded properties, and relocating residents.

In 1997, the Flood Liaison Committee adopted the *Post-Flood Mitigation Procedures*. It covers all of issues listed above. It has been used as a model in other suburbs and other states.

7.7 References

- Answers to Questions About Substantially Damaged Buildings, FEMA - 213, Federal Emergency Management Agency, 1991.
- Chapter 14, “Planning and Development,” South Holland Municipal Code.
- Flood Fighting, Illinois Department of Transportation, Division of Water Resources, 1985.
- Repairing Your Flooded Home, FEMA - 234, Federal Emergency Management Agency, 1992.
- Example Plans, National Flood Insurance Program/Community Rating System, 1992.
- Technical Information on Elevating Substantially Damaged Residential Buildings in the Midwest, Federal Emergency Management Agency, 1993
- Various guidelines and handouts prepared by the Federal Emergency Management Agency, Region V, following the Mississippi River floods, 1993.

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