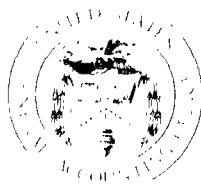


March 1991

# DISASTER ASSISTANCE

## Federal, State, and Local Responses to Natural Disasters Need Improvement



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United States  
General Accounting Office  
Washington, D.C. 20548

**Resources, Community, and  
Economic Development Division**

B-242801

March 6, 1991

**Congressional Requesters**

In response to your requests, we examined the federal government's, particularly the Federal Emergency Management Agency's (FEMA), performance in responding to Hurricane Hugo and the Loma Prieta earthquake in September and October 1989, respectively. We also reviewed state and local governments' and voluntary relief agencies' activities in California, North Carolina, Puerto Rico, South Carolina, and the U.S. Virgin Islands.

Government agencies at all levels—federal, state, and local—could have been better prepared, and improvements in disaster management are needed. We are making recommendations to the Director of FEMA and to the Congress and presenting matters for congressional consideration.

As arranged with your offices, unless you publicly release its contents earlier, we plan no further distribution of this report until 30 days after the date of this letter. At that time, we will send copies to the Director of FEMA and the Governors of California, North Carolina, Puerto Rico, South Carolina, and the U.S. Virgin Islands.

This work was performed under the direction of John M. Ols, Jr., Director of Housing and Community Development Issues (202) 275-5525. Other major contributors are listed in appendix II.



J. Dexter Peach  
Assistant Comptroller General

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**B-242801**

**List of Requesters:**

**The Honorable J. Bennett Johnston, Chairman  
Committee on Energy and Natural Resources  
United States Senate**

**The Honorable Barbara A. Mikulski, Chair  
Subcommittee on VA, HUD and Independent Agencies  
Committee on Appropriations  
United States Senate**

**The Honorable Ernest F. Hollings  
United States Senate**

**The Honorable Robert A. Borski, Chairman  
Subcommittee on Investigations and Oversight  
Committee on Public Works and Transportation  
House of Representatives**

**The Honorable John Conyers, Jr., Chairman  
The Honorable Frank Horton, Ranking Minority Member  
Committee on Government Operations  
House of Representatives**



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# Executive Summary

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## Purpose

Hurricane Hugo, which struck the U.S. Virgin Islands, Puerto Rico, and the Carolinas in September 1989, and California's Loma Prieta earthquake, which occurred in October 1989, caused multibillion-dollar damages and hardship for hundreds of thousands of people. These two major disasters represented an unprecedented challenge in the extent of damage and demands for staff and other resources for the Federal Emergency Management Agency (FEMA), which is charged with coordinating federal disaster assistance.

Concerned about the timeliness, efficiency, and coordination of the federal response, several Members of Congress asked GAO to examine how FEMA and other federal agencies carried out their responsibilities. To respond to these requests, GAO reviewed federal, state, and local emergency management activities in California, North Carolina, Puerto Rico, South Carolina, and the Virgin Islands.<sup>1</sup>

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## Background

Under the Stafford Disaster Relief Act (P.L. 100-707), FEMA assists state and local governments in preparedness, response, and recovery efforts. After the President declares a disaster, FEMA supplements the efforts and resources of state and local governments and voluntary relief agencies, which are expected to be the first responders when a disaster strikes. Emergency management includes three phases—preparedness, response, and recovery. State and local governments prepare for disasters by developing emergency plans and conducting training, exercises, and drills. In the response phase, local, state, federal, and voluntary relief agencies serve the victims' immediate needs by providing such items as food, shelter, and emergency power. FEMA does not have a stockpile of materiel resources—such as generators—but can direct other federal agencies to provide staff, equipment, supplies, and other resources. During recovery, federal assistance, such as grants and loans, is provided to repair homes and public facilities.

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## Results in Brief

The severity of these nearly simultaneous disasters highlighted some problem areas in all phases of disaster management—preparedness, immediate response, and recovery. These problem areas need federal, state, and local agencies' attention to help improve capabilities to respond to future disasters.

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<sup>1</sup>States, as used in this report, include the Commonwealth of Puerto Rico and the U.S. Virgin Islands.

Preparedness problems were linked to weaknesses in state and local programs, as well as in FEMA's assistance and overall guidance. These problems included inadequate planning and training for recovery, low participation by elected officials in training and exercises, inadequate or no standard operating procedures for response and recovery activities, and inadequate coordination between several federal agencies.

Many inefficiencies were noted in the response phase to Hurricane Hugo and the Loma Prieta earthquake. These inefficiencies resulted from staffing and coordination difficulties between agencies at all levels. Also, because FEMA is not authorized to assume the state's role as immediate responder, assistance was delayed in some cases. Legislative action may be needed to give FEMA such authority if it is to act as an immediate responder in the future, when warranted and requested by the state.

State and federal agencies, including FEMA, did not manage their recovery activities as efficiently as possible. This resulted in delays in providing assistance and in duplicate payments for certain activities. Also, legislation may be needed to clarify FEMA's role in responding to disaster-related, long-term housing needs.

While FEMA fulfilled many aspects of its basic mission of supplementing state and local efforts, the severity of these disasters highlighted the need for improvements in disaster management at various levels of government. In this regard, officials of federal, state, local, and voluntary relief agencies have identified numerous areas needing improvement, such as emergency communications, and additional staff. Many agencies have already implemented or plan in the near future to implement corrective measures designed to improve their performances in future disasters.

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## Principal Findings

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### Disaster Preparedness Varied

Preparedness is the most critical aspect of emergency management because it affects states' ability to respond to disasters. The federal government, primarily through FEMA, supplements state efforts by providing funding or guidance for plans, training, and exercises. However, state participation is voluntary, and FEMA has no practical means of ensuring a certain level of state preparedness.

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GAO found that the preparedness, and thus the capability, of the five states varied. The extent of preparedness ranged from a high level of preparedness in California, which contributed to its ability to respond to the earthquake, to a relatively low level of preparedness in the Virgin Islands, which, together with the magnitude of the disaster, meant that federal agencies had to assume much of the role of first responder after the hurricane struck because the territory could not organize an effective response effort.

Preparedness problems were linked to weaknesses in state and local programs, as well as in FEMA's assistance and overall guidance. These problems included inadequate planning and training for recovery, low participation by elected officials in training and exercises, inadequate or no standard operating procedures for response and recovery activities, failure to correct problems identified during earlier training exercises, a limited number of staff having the necessary disaster assistance skills, and inadequate coordination between several federal agencies.

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### Response Needs Met, but Staffing and Coordination Problems Existed

Generally, state and local governments and voluntary relief agencies that are responsible for immediately responding to disasters fulfilled their specific roles. For example, they evacuated citizens before the hurricane struck and provided emergency services, such as food and shelter. Federal agencies also participated in these activities by assisting states and local agencies. In North and South Carolina, for example, FEMA officials provided on-site technical assistance before Hurricane Hugo struck. State officials in the five states said that FEMA promptly satisfied nearly all state requests for essential items, such as food, water, and generators. In fact, 80 percent of the 121 local emergency management officials GAO surveyed said that no requested assistance for essential items was delayed long enough to hinder their ability to respond effectively. In addition, 98 percent said their emergency shelters were opened within 1 day of the disaster.

Federal and state officials, however, experienced problems in staffing and coordinating the wide range of response activities. Therefore, the immediate response was not as efficient as it could have been. In the Virgin Islands, for example, the territorial government was not adequately prepared to carry out its response role, and federal agencies filled the gap by performing many of the duties generally carried out by the state. In Puerto Rico, staffing shortages affected state government agencies' ability to provide shelter. In South Carolina, coordination difficulties resulted because two, rather than one, state emergency operation



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centers were opened, causing delays in initially filling a number of local governments' requests for aid.

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### Staffing and Coordination Problems Hampered Recovery Efforts

At the peak of recovery operations, FEMA employed about 3,350 people in disaster relief activities in the 5 states, compared with the approximately 230 staff normally assigned to its disaster relief program. GAO identified areas where FEMA's management of the recovery phase should be improved—administration, agency coordination, and housing. For example, in administration, federal, state, and voluntary relief agencies' computer systems were incompatible, and these agencies had to duplicate thousands of assistance applications and enter their data into their computer systems, which resulted in delayed assistance. Coordination difficulties surfaced in FEMA's relationship with several other federal agencies.

FEMA also had difficulty in addressing the housing needs of low-income disaster victims in California and the Caribbean. In California, about 4,000 low-income housing units were destroyed or severely damaged. Thirteen months later, 114 units had been approved for funding. In December 1990, an agreement was signed between FEMA and tenant advocacy groups protesting delays in housing rehabilitation. This agreement requires FEMA to provide funds to replace 2,070 low-income housing units made uninhabitable by the earthquake. In the Caribbean, FEMA established "eligible-created resources" under which homeowners were eligible for cash grants to build new homes. GAO concluded that this approach does not conform to the explicit requirements of the Stafford Act. Ten months after the hurricane, about 400 families in the Virgin Islands had not been provided with housing assistance from FEMA.

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### Lessons Learned and Actions Planned

Agencies at all levels of government involved in disaster assistance have recognized, after these two disasters, the need for improvements in all phases of disaster operations. Further, many agencies have already implemented or soon plan to implement corrective measures. For example, FEMA is currently modifying its training to more fully address recovery needs. FEMA is also considering streamlining the process for providing individual assistance, and has increased its reservist force. South Carolina is taking steps to ensure that state and local elected officials receive proper training and instruction to help ensure that they understand their roles and duties when a disaster strikes. At the local

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level, a South Carolina county recognized a need for better communications between the state and local levels of government and is working with the state to improve this situation.

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## Recommendations

To help ensure that federal, state, and local agencies are better prepared to respond to disasters, GAO is making recommendations to the Director of FEMA to improve disaster-related administration, training, and coordination activities. GAO is also recommending that the Congress either (1) clarify the portions of the Stafford Act concerning the Department of Housing and Urban Development's (HUD) role in providing housing assistance to disaster victims or (2) amend housing legislation to provide appropriations to HUD for disaster assistance.

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## Matters for Congressional Consideration

The Congress may wish to consider providing FEMA with authority to perform as a first response agency, where such assistance is warranted, and should consider authorizing FEMA to institute approaches that provide permanent, rather than temporary, housing to disaster victims. Such authority should be available only where special circumstances make it impracticable to provide temporary housing.

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## Agency Comments

As requested, GAO did not request written comments on a draft of this report. However, GAO discussed the factual information with the federal and state agencies, and they generally agreed with the information presented. FEMA disagreed with GAO's conclusion concerning the eligible-created resources approach. GAO concluded that this method of meeting homeowners' needs does not conform to the Stafford Act's requirements because housing is made available on a permanent instead of temporary basis. FEMA has taken the position that the Stafford Act provides the flexibility to use eligible-created resources for housing needs. In addition, the Virgin Islands took issue with GAO's description of its role of first responder. As a result, GAO added information to the report to reflect its views.



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**Abbreviations**

DOD	Department of Defense
EPA	Environmental Protection Agency
EPD	Emergency Preparedness Division
FEMA	Federal Emergency Management Agency
GAO	General Accounting Office
HUD	Department of Housing and Urban Development
IFG	Individual and Family Grant program
SBA	Small Business Administration
SCS	Soil Conservation Service
SLPS	State and Local Programs and Support Directorate
SRO	single room occupancy

# Introduction

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During September and October 1989, the United States experienced two of the worst natural disasters in its history—Hurricane Hugo and California’s Loma Prieta earthquake. Hurricane Hugo was one of the most devastating and costly hurricanes ever to strike the United States and its territories. It struck the U.S. Virgin Islands on September 17, 1989, with winds in excess of 140 miles per hour. The storm passed directly over St. Croix and Puerto Rico, and on September 22 it hit the coast of South Carolina. It then continued through North Carolina.

About a month later—on October 17, 1989—the Loma Prieta earthquake struck northern California. It measured 7.1 on the Richter scale—the strongest earthquake to strike the San Francisco Bay area since 1906. The main shock lasted 7 to 10 seconds and was felt over a 400,000-square-mile area. Estimated damage of more than \$6 billion was reported from Sacramento to Monterey, with severe damage in Alameda, San Francisco, and Santa Cruz counties. State and local emergency management agencies, as well as voluntary relief agencies, are expected to be the first agencies to respond to the needs caused by natural disasters. FEMA and other federal agencies supplement these efforts.

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## Damage Caused by Hurricane Hugo and the Loma Prieta Earthquake

After Hurricane Hugo and the Loma Prieta earthquake, federal, state, and local agencies faced extraordinary challenges to provide the services and supplies needed to help those affected by the disasters and to rebuild housing and public facilities. In an average disaster,<sup>1</sup> the Federal Emergency Management Agency (FEMA) estimates that about 2,500 individuals and families apply for federal disaster assistance, and FEMA would spend about \$10 million. In contrast, after Hurricane Hugo and the Loma Prieta earthquake, about 400,000 individuals and families requested assistance. FEMA’s estimated expenditures for these disasters, as of December 12, 1990, amounted to over \$2 billion, as shown in table 1.1.

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<sup>1</sup> Although a natural disaster may strike several states, the President considers each state individually for major disaster declarations. Accordingly, Hurricane Hugo resulted in four major disaster declarations.

**Table 1.1: FEMA's Estimated Expenditures and Disbursements for Hurricane Hugo and the Loma Prieta Earthquake**

Location	Estimated expenditures	Disbursements
California	\$528,335,000	\$125,973,915
North Carolina	59,000,000	36,214,130
Puerto Rico	702,810,000	462,847,960
South Carolina	407,000,000	263,130,304
Virgin Islands	452,000,000	193,154,755
<b>Total</b>	<b>\$2,149,145,000</b>	<b>\$1,081,321,064</b>

Note: Data are as of Dec. 12, 1990.

Source: Compiled by GAO from FEMA data.

Table 1.2 shows the amount paid to hurricane victims who were covered under the National Flood Insurance Program.<sup>2</sup> Payments from this program are derived from insurance premiums paid by the policyholders.

**Table 1.2: Payments to Victims of Hurricane Hugo Through FEMA's National Flood Insurance Program**

Location	Total claims	Claims paid	Total payments	Average payment
North Carolina	1,146	871	\$5,911,548	\$6,787
Puerto Rico	644	436	2,435,101	5,585
South Carolina	14,668	11,316	349,849,234	30,916
Virgin Islands	505	315	5,624,572	17,856
<b>Total</b>	<b>16,963</b>	<b>12,938</b>	<b>\$363,820,455</b>	<b>\$28,120</b>

Note: Data are as of Nov. 15, 1990.

Source: FEMA.

In addition, other federal agencies, including the Departments of Agriculture, Education, and Transportation and the Small Business Administration (SBA), have projected expenditures of about \$1.5 billion for these disasters, as of September 7, 1990.

## Emergency Management Includes Three Phases

Emergency management operations for disasters include three phases: (1) preparedness, (2) response, and (3) recovery. In the preparedness phase, state and local governments administer emergency preparedness programs with ongoing activities to help ensure that they are ready to respond to disasters. Their programs include preparation of emergency operations plans and participation in training and disaster exercises that

<sup>2</sup>The National Flood Insurance Program is a federal program, administered by FEMA, that provides property owners with flood insurance. The program is designed to provide an alternative to disaster assistance.

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simulate actions before and after a disaster. FEMA partially funds emergency preparedness programs. In fiscal years 1989 and 1990, FEMA provided over \$94 million each year to states for their programs' emergency preparedness activities.

During the response phase, local, state, federal, and voluntary relief agencies address emergency needs. Among other things, they provide food and shelter, and restore electric power. Once the immediate disaster response is underway, agencies begin the recovery phase. The recovery phase involves such activities as funding the repair of houses and public facilities and providing assistance to individuals and businesses for damages.

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## Many Agencies Provide Assistance

When a disaster threatens or strikes, responsibility for protection, relief, and recovery initially resides with the individuals and institutions affected, with aid from state and local governments and voluntary relief agencies. When these resources are inadequate, the governor can request federal assistance. The disaster relief program, managed by FEMA, is the primary source of federal aid. The President declares major disasters under the Robert T. Stafford Disaster Relief and Emergency Assistance Act (P.L. 100-707), as amended, under which federal assistance supplements the efforts and resources of state and local governments and voluntary relief agencies. The 1988 act made substantial changes to prior disaster relief legislation; in particular, it expanded eligibility and increased funding in both individual and public assistance programs.

FEMA's pre-disaster activities include assisting, reviewing, and providing funds for state emergency preparedness activities. In the response phase, FEMA monitors potential or actual disasters, assesses damages, and prepares a recommendation for a disaster declaration after the governor determines that the magnitude of the situation exceeds the state's capabilities. FEMA may also identify a location for the disaster field office, which serves as a focal point for FEMA's coordination activities and supports other federal, state, and voluntary relief agencies as well. FEMA also coordinates with local governments to identify locations for disaster application centers, which provide central locations within the affected area for individuals, families, and businesses to apply for aid.

After the declaration, FEMA and the state sign an agreement describing the terms and conditions governing federal disaster assistance. The



agreement lists the counties eligible for assistance; stipulates any division of costs among federal, state, and local governments, and other conditions of assistance; and specifies the period officially recognized as the duration of the disaster.

Following a presidential declaration, individuals, as well as public and nonprofit entities, are eligible for federal grants and/or loans. To obtain assistance, disaster victims must apply to different federal, state, and voluntary relief agencies that determine the types and amounts of assistance to be provided.

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## Assistance for Individuals and Families

Individuals and families seeking assistance must often apply to several different agencies for assistance. Victims whose immediate needs are not met by voluntary relief organizations, such as the Red Cross and the Salvation Army, can register with FEMA by telephone or in person at one of the disaster application centers, where representatives of federal, state, local, and voluntary relief agencies provide information and offer assistance. For example, after a person applies for housing assistance, FEMA inspects the property to verify the extent of damage. Under its temporary housing program, FEMA can provide (1) a grant (generally not to exceed \$5,000) to make minimal repairs to restore habitability;<sup>3</sup> (2) rental assistance, generally for 1 to 3 months, but up to 18 months; (3) a mobile home for up to 18 months if other rental housing is not available; or (4) readily fabricated housing (used only in the Caribbean and Pacific islands). If FEMA cannot satisfy the victims' temporary housing needs, it refers them to SBA or, as appropriate, to other programs. For example, victims whose homes are damaged beyond the FEMA allowance for minimal home repairs or who seek assistance for damage to personal property are referred to SBA's disaster loan program.

SBA lends up to \$100,000 for real property damage and up to \$20,000 for personal property. SBA inspects the property to verify the extent of damage, determines whether the applicant has the ability to repay the loan, and if the applicant qualifies, offers either an 8-percent loan for 3 years or a 4-percent loan for 30 years.

Applicants who do not qualify for SBA loans are referred to the Individual and Family Grant (IFG) program. The IFG program is administered by the state, with the federal government providing 75 percent of the

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<sup>3</sup>On a case-by-case basis, FEMA authorized a \$10,000 and \$12,000 maximum for Puerto Rico and the Virgin Islands, respectively, for Hurricane Hugo.

grant costs. The IFG program offered grants of up to \$10,400 for serious disaster-related needs not covered by other programs or insurance.

Victims unable to meet eligibility requirements for these programs or who have remaining unmet needs may apply to the Red Cross, Salvation Army, or other voluntary relief agencies for aid and assistance.

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### Assistance for Damaged Public Facilities

FEMA provides public assistance funds for emergency work to save lives and protect health, safety, and property and for permanent work to repair, restore, and replace damaged public and nonprofit facilities. The federal portion of public assistance funding is at least 75 percent, with the state and/or local governments generally paying the remaining 25 percent.

Public assistance for different needs is available for debris removal, emergency protective measures (such as sandbagging or bracing buildings) to eliminate health and safety hazards and to help prevent additional damage to structures, roads and bridges, water control facilities, public buildings and utilities, and repairs to other facilities.

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### FEMA Coordinates Role of Other Responders

Other agencies also have established roles in emergency management. FEMA coordinates the work of these agencies—federal, state, local, and voluntary—during different phases of emergency management.

At the federal level, in addition to FEMA, other agencies assist in responding to major disasters. FEMA often establishes memoranda of understanding with federal agencies to help clarify and delegate disaster relief responsibilities. At the time of the hurricane, FEMA had no materiel resources, such as generators, to provide if a disaster were declared. However, when a disaster is declared, FEMA may develop “mission assignments” that direct federal agencies to perform specific disaster activities.<sup>4</sup> In addition, some federal agencies, such as the U.S. Army Corps of Engineers (Corps), have their own authority to conduct particular disaster relief and recovery activities. While FEMA may give any federal agency a mission assignment, those federal agencies that generally may be involved in responding to disasters are listed in appendix I.

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<sup>4</sup>FEMA augments its staff, equipment, supplies, facilities, and other resources, including managerial and technical services, in support of state and local disaster assistance efforts through mission assignments. Normally, mission assignments direct other federal agencies to perform work to assist FEMA in accomplishing its disaster recovery tasks.

At the state and local levels, state and local governments have the primary responsibility for disaster relief preparedness, response, and recovery. State and local emergency management agencies, using FEMA funds and technical guidance, develop emergency operations plans and conduct training programs. These agencies also conduct exercises to test emergency operations plans. The state emergency management agency is responsible for reviewing such plans to help ensure that they comply with FEMA's guidelines. State governments also act as an agent through which federal disaster assistance is obtained.

Finally, voluntary relief agencies, such as the American Red Cross and the Salvation Army, assist state and local governments in their first response roles by providing and distributing food, clothing, shelter, medicine, and other related emergency supplies and equipment. The disaster assistance roles of voluntary relief agencies may be designated by one or more of the following methods: (1) self-defined missions; (2) agreements with local, state, and federal agencies; or (3) legislative mandate. FEMA is authorized to use the services of voluntary organizations and to establish agreements for coordinating disaster relief efforts. The Red Cross, the largest voluntary provider of assistance during the Hurricane Hugo and Loma Prieta earthquake disasters, also assists in disaster recovery efforts by providing grants to individuals and families, and referring families to available governmental and other resources for aid.

## **Objectives, Scope, and Methodology**

We received requests from Senator Ernest F. Hollings and the chairpersons of several committees and subcommittees to review the federal government's, and particularly FEMA's, performance in responding to the Hurricane Hugo and Loma Prieta earthquake disasters, which occurred in September and October 1989, respectively. We were also asked to review state and local governments' and voluntary relief agencies' activities. The major objectives of these requests were to review FEMA's

- implementation of its responsibilities under the Stafford Act;
- timeliness, efficiency, and competency in responding to the needs of state and local governments and disaster victims;
- capability for coordinating and directing the activities of other governmental and nonprofit relief organizations; and
- relationship and coordination with state and local disaster assistance agencies.

Our work was done at the FEMA disaster field offices, where federal, state, and voluntary relief agencies coordinate their response efforts;

disaster application centers, where disaster victims apply for assistance; FEMA regional offices; and FEMA headquarters. We contacted federal and voluntary relief agencies involved in disaster response and recovery to determine the adequacy of the overall federal response. These agencies included the Departments of Agriculture, Defense (DOD), Education, Housing and Urban Development (HUD), and the Interior; Environmental Protection Agency (EPA); General Services Administration; SBA; and voluntary relief agencies, such as the American Red Cross and the Salvation Army. We also interviewed state officials for each of the states included in our review to discuss preparedness (including planning and training), response, and recovery activities.

At the federal level, we reviewed FEMA's disaster declaration information; damage assessment reports; mission assignments to other federal agencies; temporary housing, IFG, and public assistance application status reports; and additional documentary evidence and support pertaining to the objectives of this review. State and local government documentation and records we reviewed included emergency operations, public assistance, IFG, and hazard mitigation plans; journals, records, and correspondence concerning requests for emergency services such as debris removal, generators, and other types of disaster assistance; emergency exercise reports; and schedules and rosters of emergency operations training.

Because requests for assistance usually originate at the local level and because officials at this level are among the first to identify the nature and extent of the damage, we conducted a survey of local emergency preparedness officials. We contacted 121 of the 122 counties or localities included in the disaster declarations in California (11), North Carolina (29), Puerto Rico (57), and South Carolina (24) to assess the timeliness and efficiency with which requests for assistance were handled.<sup>5</sup> Interviews were not conducted with local officials in the U.S. Virgin Islands because there is no local government comparable to counties (as in California, and North and South Carolina) or municipios (as in Puerto Rico). But comparable information was obtained from territorial government officials. The survey was conducted during April and May 1990.<sup>6</sup> We asked respondents about the adequacy of emergency preparedness training and plans; training needs; the specific requests that emergency

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<sup>5</sup>We were unable to contact representatives from one of the cities in California that had received a disaster declaration.

<sup>6</sup>A copy of the questionnaire, which shows the overall response, is available upon request. The Spanish translation of the questionnaire used in Puerto Rico is also available upon request.

personnel made for assistance such as food, water, generators, and medical supplies; and the timeliness of the responses to these requests. All instances for which local officials identified difficulties or delays in receiving requested assistance were traced to the state level and, if appropriate, to the federal level to determine the causes of the delays. Portions of this survey were also conducted with officials from each of the states to determine whether they had difficulties with requests for assistance from FEMA. We also reviewed reports, testimonies, speeches, and other documents from federal, state, local, and voluntary relief agencies that discussed lessons learned as a result of Hurricane Hugo or the Loma Prieta earthquake.

We performed our detailed audit work between October 1989 and September 1990, and updated information dealing with federal and state actions through January 1991, in accordance with generally accepted government auditing standards. As agreed with the requesters' offices, we did not request formal agency comments on this report. However, we did discuss the facts presented in this report with federal and state agencies, and they generally agreed with the facts presented.

# Preparedness for Disaster Response and Recovery Varied

Preparedness is the most critical aspect of emergency management. It affects state and local governments' ability to respond to citizens' needs immediately after a disaster as well as during the longer-term recovery. State and local governments have primary responsibility to prepare for and respond to a disaster. The federal role—primarily through FEMA—supplements state and local preparedness efforts by providing guidance on the content of disaster plans, training courses, and exercises to test plans and funding for planning and training.

The preparedness, and thus the capability, of the states we reviewed varied. California, for example, has a large state emergency organization and state-funded training. In contrast, the Virgin Islands had one emergency planner and no state-funded training. California's level of preparedness contributed to its ability to respond to the earthquake with relatively few problems, while the Virgin Islands' lack of preparedness meant that FEMA and other federal agencies had to assume the territory's role as "first responder" because it could not organize an effective response effort.

While some states we reviewed were well prepared, all of them had some problems in their preparedness efforts. These problems resulted from weaknesses in state and local programs, as well as in FEMA's assistance and overall guidance. They include inadequate planning and training for recovery; low participation by elected officials in training and exercises; inadequate and/or no standard operating procedures for response and recovery activities, such as managing an emergency operations center; and failure to correct problems that state and local officials' agencies identified earlier.

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## State and Local Disaster Preparedness Efforts Supported by FEMA

State and local governments have primary responsibility for disaster preparedness. They, therefore, should develop emergency plans and conduct classroom instruction and training exercises to prepare their officials for disasters. FEMA provides guidance for plans, training, and exercises, and funds emergency planning and training. However, state participation in these preparedness activities is voluntary, and FEMA has no practical means of ensuring state preparedness.

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## State and Local Governments Prepare for Disasters

States are responsible for developing emergency preparedness plans, offering emergency preparedness classroom training to state and local officials, and providing guidance to local officials on how to prepare local plans. Local governments are responsible for developing plans,

which outline their disaster roles and responsibilities, and conducting and evaluating training exercises. Local emergency management officials we surveyed believed they were well prepared to respond to Hurricane Hugo or the Loma Prieta earthquake, but some believed that improvements could be made. Additionally, they all said they had an emergency operating plan at the time the disaster struck.

Local emergency managers we surveyed also favorably rated their preparedness activities. For example, 77 percent of the local emergency management directors believed that, overall, the training they received between January 1988 and the disasters did a good job in preparing the local staff to respond effectively to these disasters. About 80 percent of the local emergency management directors reported that their emergency plans did a good job in preparing them for the disasters. In general, the more times a county had drilled before the disaster since January 1988, the more closely it used the plan as intended during the disaster. Further, between January 1, 1988, and September and October 1989, when the disasters struck, local officials said they had conducted an average of 4.7 training exercises.

**FEMA Provides Assistance to States**

FEMA provides technical assistance and funds to states for their preparedness programs through comprehensive cooperative agreements. Each state we reviewed had agreed with FEMA to accomplish certain objectives to increase emergency management capability, such as developing plans and conducting classroom instruction and training exercises. Through these agreements, FEMA provides funding or guidance for drafting emergency plans, training state and local employees, and conducting training exercises. Table 2.1 shows the amount of disaster preparedness funds FEMA obligated for fiscal year 1989 to each of the five states.

**Table 2.1 FEMA Disaster Preparedness Funds to Five States, Fiscal Year 1989**

<b>State</b>	<b>Funds<sup>a</sup></b>
California	\$7,322,204
North Carolina	2,123,188
Puerto Rico	1,247,390
South Carolina	1,507,044
Virgin Islands	215,433
<b>Total</b>	<b>\$12,415,259</b>

<sup>a</sup>Distribution of funds is based, in part, on state population.  
Source: FEMA.

Although FEMA can withhold funds when states do not accomplish the agreed-upon objectives, such as updating emergency preparedness plans, FEMA officials believe that withholding funds is not a realistic option for enforcing preparedness agreements. Instead, withholding funds can result in a lower degree of preparedness.

In addition to general disaster assistance, FEMA offers a number of disaster-specific preparedness activities to assist state and local governments.<sup>1</sup> During fiscal year 1990, for example, FEMA provided funds for the earthquake program in 17 earthquake-prone states. Additionally, FEMA coordinates with 26 federal agencies that plan and conduct training exercises to aid in their overall response to catastrophic earthquakes. In California, federal and state officials said a FEMA exercise that tested the catastrophic earthquake plan—2 months before the earthquake—contributed greatly to a well-coordinated response.<sup>2</sup> Further, FEMA has adapted the catastrophic earthquake preparedness plan for responding to catastrophic and near-catastrophic disasters, such as hurricanes of Hugo's magnitude. In November 1990, FEMA issued its draft Federal Natural Disaster Response Plan. The Plan establishes the basis for fulfilling the federal government's role in providing response and recovery assistance to a state and its local governments affected by a catastrophic earthquake or other significant natural disaster.

For hurricanes, FEMA provided funds for 30 evacuation studies in 19 states. Hurricane evacuation studies help to determine the amount of time needed to evacuate counties, given the local population and the severity of the storm. These studies proved useful during Hurricane Hugo. For example, FEMA-funded hurricane studies helped in conducting successful evacuations in South Carolina, where state officials evacuated about 264,000 people from coastal areas. As of November 1990, 15 studies had been completed in 13 states. FEMA also had 15 additional studies underway in 12 states, including Puerto Rico, which are scheduled for completion by fiscal year 1993.

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<sup>1</sup>Disaster-specific activities are for one type of disaster, rather than general training, which may be applicable in responding to several types of disasters.

<sup>2</sup>The catastrophic earthquake plan outlined the policies, operations, organizational structures, and specific assignments of responsibility that provide the basic federal supplemental assistance to state and local efforts in responding to a catastrophic earthquake.



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## Level of Preparedness Differs Among States

State and local governments decide what resources and emphasis their preparedness programs receive; consequently, their emergency response and recovery capabilities differ. Emergency management capabilities among the five states differ by a state government's organizational structure, level of state staffing and training, frequency of exercise drills, and frequency of presidentially declared disasters. FEMA's Associate Director, State and Local Programs and Support Directorate (SLPS), said capabilities to respond to natural disasters of the magnitude and complexity of Hurricane Hugo vary widely at all levels throughout the emergency management community.

For example, FEMA officials said that states such as California and North Carolina have placed emphasis on their disaster preparedness programs, and that these states generally had few coordination problems during the immediate response phase. Although the situations in these states were not as severe as those in the three other states, these states reported making fewer requests to FEMA for immediate emergency assistance than the other three states. In contrast, the Virgin Islands had difficulties in implementing its emergency plan and did not correct problems it had identified during earlier training exercises. These problems contributed to the Virgin Islands' inability to fulfill its first responder role after Hurricane Hugo struck.

The following discussion illustrates the different degrees of emphasis the states had placed on disaster preparedness.

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### California

California has had four presidentially declared disasters, including the Loma Prieta earthquake, since October 1, 1987. As of July 1990, the State Office of Emergency Services had a staff of about 209, including about 86 planners and 26 training staff. During fiscal year 1989, the state funded 15 emergency management training courses through its training institute, in addition to FEMA-funded training courses. The training institute offers state-sponsored training courses, such as design and function of emergency operations centers, and disaster planning courses, complemented by FEMA-sponsored courses. FEMA's regional training official said California's training program is excellent. Between January 1, 1988, and the earthquake's occurrence, California counties that were declared a disaster after the Loma Prieta earthquake had conducted, on average, eight training exercises to test their emergency plans. In its fiscal year 1988 report on state and local exercise requirements, FEMA stated that California had fulfilled its disaster exercise requirements.

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**North Carolina**

North Carolina had three presidentially declared disasters, including Hurricane Hugo, in fiscal year 1989. At the time of Hurricane Hugo, North Carolina's Division of Emergency Management had a staff of 77, including 22 planners and 7 training and/or exercise officers. In addition to FEMA-funded training, the state funded 39 additional training courses in fiscal year 1988 and 9 in fiscal year 1989. FEMA officials said North Carolina was successful in obtaining emergency management funds from nonfederal sources, such as private companies and other state funds.<sup>3</sup> In fiscal year 1989, North Carolina's non-FEMA funding totaled about \$4.2 million, including \$2.7 million in state funds and \$1.5 million in other nonfederal funds. North Carolina counties reported conducting an average of four exercises during fiscal years 1988 and 1989. In its fiscal year 1988 report on state and local exercise requirements, FEMA rated North Carolina's overall disaster exercise activities as exceeding requirements.

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**Puerto Rico**

Puerto Rico has had two presidentially declared disasters, including Hurricane Hugo, since October 1, 1987. As of August 1990, Puerto Rico's Office of Civil Defense had about 130 staff, plus 10 planners and 2 training and/or exercise officers. In fiscal year 1989, Puerto Rico had 49 state-funded training activities, including orientation sessions and conferences. In its fiscal year 1988 report on state and local exercise requirements, FEMA stated that Puerto Rico did not meet its performance requirements because information provided on exercise objectives was inadequate. A FEMA regional official said local governments were better prepared to respond during Hurricane Hugo than the state government.

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**South Carolina**

South Carolina has had one presidentially declared disaster since October 1, 1987—Hurricane Hugo.<sup>4</sup> South Carolina's Emergency Preparedness Division has a staff of 37, including 14 planners and 2 training and/or exercise officers. As of July 1989, the state had no state-funded training. In its fiscal year 1988 report on state and local exercise requirements, FEMA reported South Carolina's overall performance of disaster exercise activities as "undetermined" because the data in South Carolina's exercise reports were inadequate to determine the state's performance.

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<sup>3</sup>Nonfederal funding included encumbrances from the previous fiscal year, assessments against utility companies, transfers from other state funds through the Governor's office, a Department of Administration transfer for construction, and public donations for tornado and hurricane victims.

<sup>4</sup>South Carolina had another major disaster declaration in October 1990.

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## Virgin Islands

The Virgin Islands has had one presidentially declared disaster since October 1, 1987—Hurricane Hugo. As of August 1990, the Virgin Islands Territorial Emergency Management Agency had a staff of 13, including 1 planner and 2 training and/or exercise officers. FEMA officials notified the territory that the planner was not performing planning activities as required by FEMA regulations, according to a territorial official. Also, the Virgin Islands' emergency operations administrative plan was found inadequate by the Virgin Islands Territorial Emergency Management Agency because it was outdated and too complex. The Virgin Islands has no state-funded training courses and did not follow FEMA's training guidance. According to a FEMA regional official, the former Virgin Islands emergency management director did not want FEMA involved in his managerial decisions and therefore did not send representatives to FEMA-sponsored training. In its fiscal year 1988 report on state and local exercise requirements, FEMA said the Virgin Islands met its annual exercise requirements. FEMA Region II officials, however, more recently said the Virgin Islands continues to be inadequately prepared to respond to a major disaster.

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## Limited Participation by Elected Officials in Preparedness Activities

Officials in North and South Carolina and the Virgin Islands said few elected officials participated in classroom training and training exercises. In commenting on this lack of participation, the South Carolina Governor's Emergency Management Review Panel reported in July 1990 that through training, elected officials would become more knowledgeable of the roles of agencies and the resources that are available to them during times of emergency. Given their responsibilities, the report concluded that it is important that these officials be competent in a number of emergency management skills in the event of a disaster.

In Charleston County, South Carolina, which sustained some of the state's heaviest damage from Hurricane Hugo, limited participation by elected officials in exercises contributed to coordination difficulties, such as a lack of knowledge about FEMA's role, during the immediate response phase of the disaster. To improve this situation, South Carolina's Emergency Preparedness Division is considering developing mandatory training programs for local and municipal elected officials.

Further, FEMA noted that one of the major problems with state and local responses to Hurricane Hugo was inadequate attention by state and local elected officials to disaster preparedness. The Virgin Islands' exercise officer cited low participation by elected officials in fiscal year 1989 training exercises. The Virgin Islands' interagency hazard mitigation

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team recommended that the executive and legislative branches of government be made thoroughly familiar with the procedures and mechanisms for disaster preparedness, response, and recovery.<sup>5</sup>

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## Emergency Preparedness Improvements Needed at All Levels

The positive effects of emergency preparedness, such as successful evacuation activities, are obvious. However, we identified several problems that need to be addressed: minimal planning and training for recovery, low participation by elected officials in classroom and exercise training, inadequate or no standard operating procedures for response and recovery activities, and uncorrected problems identified during training exercises. Weaknesses in these areas at all levels of government contributed to the lack of coordination that disaster assistance providers encountered during immediate response and recovery; these weaknesses also resulted in a duplication of effort and unnecessary delays in providing essential assistance.

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## FEMA Placed Little Emphasis on Longer Term Recovery Needs

FEMA requires states to have separate emergency plans for administering disaster recovery programs, such as plans for the IFG and the public assistance programs. Under FEMA criteria, however, local governments may have only one emergency plan, which may not adequately address recovery information—such as locating and furnishing disaster application centers and contracting for debris removal. Although the majority of the local emergency management officials we surveyed believed the plans prepared them for disaster, 39 percent said their plans needed major changes, including six officials who stated the need for specifying additional recovery-related information.

FEMA uses the criteria in its civil preparedness guide to review local emergency plans and provide feedback, as appropriate, through the states. However, civil preparedness guides have few provisions for recovering from a disaster. For example, only 4 of FEMA's 217 data requirements for reviewing emergency plans partially or fully addressed recovery issues. In addition, while there were at least 11 data requirements for operating and managing the emergency operating center, no such provisions were included for identifying and establishing disaster application centers. Further, no provisions were included for identifying and managing the damage inspection and reimbursement process for public and private nonprofit facilities.

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<sup>5</sup>The interagency hazard mitigation team is composed of officials from federal, state, and local agencies that, in the immediate aftermath of a disaster, meet to identify disaster mitigation opportunities.

Because FEMA has placed little emphasis on recovery issues in its planning guidance and training curriculum, states, in turn, provide a minimal amount of training for recovery activities. Further, local officials do not conduct recovery activities in their exercise drills because such activities are not conducive to training exercises, according to a FEMA training officer. Training exercises coordinate disaster response services in the context of time pressures and life-threatening circumstances. FEMA officials said their training courses focus almost exclusively on disaster preparedness and give little attention to recovery issues.

In addition, some FEMA and state and local emergency management officials believe FEMA's training courses are overly focused on civil defense preparedness. Although some of the civil defense training is applicable to natural disasters, not all phases of disaster emergency management are adequately covered. Headquarters officials from both the disaster assistance program and the civil defense program said response and recovery issues are inadequately addressed in FEMA courses. The civil defense official said that FEMA has not had sufficient resources to support planning and training programs for all disaster phases and has, therefore, used its resources for preparedness programs and activities.

In March 1990, at a meeting of state training officers, 36 out of 51 state officers signed a training resolution calling for FEMA to revise its training courses in order to support all phases of emergency management, including recovery. Training officers from four of the five states we reviewed signed the resolution. Additionally, the training officer from the fifth state said that although he missed the opportunity to sign the resolution, he agreed with the resolution.

Further, nearly 60 percent of the local emergency management officials we surveyed wanted training that was not currently being offered. Of these officials, 29 percent cited training in response activities and 27 percent cited training in recovery activities.

As a result of inadequate training in recovery operations, state and local emergency officials said they experienced some confusion in performing their duties, as the following situations indicate:

- In one heavily damaged North Carolina county, local representatives did not know the proper bid process for procuring contractors to remove debris and therefore used a needlessly long bid process in hiring contractors. A fire hazard existed while debris remained on the streets.

- In California, officials in one jurisdiction said they had learned how to handle recovery activities from their experiences with previous disasters. Another jurisdiction in the same county with no previous experience in responding to disasters was not prepared to handle recovery activities and experienced problems when estimating disaster-related damage. Because some local officials did not understand FEMA procedures, they were concerned that the dollar amount rather than the scope of damage listed on the damage survey report would limit the repair of damaged public facilities.
- In North and South Carolina, state officials provided local officials, who were responsible for applying for public assistance, with only one 2-hour briefing on their roles and responsibilities. Because South Carolina did not provide additional training to local officials on how to obtain reimbursement for public assistance funds, local officials were uncertain about how to prepare paperwork and were not aware of the procedures for requesting supplemental benefits. One federal coordinating officer said local officials responsible for applying for public assistance funds did not receive adequate training from the state.

### **Lack of or Inadequate State Standard Operating Procedures Hampered Response and Recovery Activities**

The lack of or inadequate standard operating procedures hampered response and recovery operations in three states—California, South Carolina, and the Virgin Islands. Standard operating procedures are detailed procedures for implementing tasks, such as managing an emergency operations center or reimbursing local governments for public assistance projects. In South Carolina, state officials managing the public assistance program and the IFG program had to develop standard operating procedures as they carried out these functions and, as a result, they spent valuable time developing procedures instead of providing assistance. Lack of or inadequate standard operating procedures for state emergency operations centers in California, South Carolina, and the Virgin Islands contributed to coordination difficulties, such as keeping track of assistance requests.

South Carolina's interagency hazard mitigation team reported in October 1989 that state and local governments had not developed adequate standard operating procedures to cope with emergency alert, response, and recovery needs. Since the earthquake, California emergency officials have revised their standard operating procedures to (1) more clearly describe staff duties and responsibilities and (2) specify procedures for handling requests for resources, and established an organizational structure for an emergency operations center.

FEMA requires state agencies with assigned emergency duties to develop standard operating procedures when FEMA and the state include such procedures in the state's comprehensive agreement with FEMA. We reported on problems caused by the lack of adequate standard operating procedures as early as 1980. In a March 1980 report,<sup>6</sup> for example, we said that state agencies generally are not prepared to effectively implement the disaster response and recovery tasks assigned to them under their respective emergency operations plans because they have not developed detailed procedures on how to accomplish the tasks. The lack of standard operating procedures will cause significant problems in providing relief services to disaster victims on a timely basis, and problems encountered by state agencies demonstrate the importance of having detailed standard operating procedures.

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### Disaster Exercise Problems Not Corrected

Disaster simulation exercises are used to test and evaluate state and local governments' operating plans and the governments' capabilities for responding effectively to emergencies. FEMA requires state and local governments that receive FEMA funding to conduct at least one exercise annually that simulates different disaster scenarios. After each exercise, the local jurisdiction must report to the state any problems encountered and subsequent plans for remedial action. However, in four of the five states we reviewed, state officials had not ensured that the jurisdictions had taken the remedial actions.

These exercises were instrumental in preparing state and local officials to respond to the major disasters, according to a FEMA regional training officer. In the four states affected by Hurricane Hugo, officials incurred problems during response that were identified in exercises held just prior to the hurricane. For example, Puerto Rico experienced coordination and mass care (i.e., food and shelter) problems during Hurricane Hugo, and these same problems had been identified in an earlier hurricane-related exercise. About 33 percent of the county-level emergency managers in Puerto Rico said they did not have the necessary resources, such as adequate numbers of staff, for shelter operations during Hurricane Hugo. Further, exercises in the Virgin Islands and/or 28 counties in North and South Carolina identified problems with communications, interagency coordination, emergency plans, or standard operating procedures. State and local officials, however, did not correct some of these problems, and they surfaced again when jurisdictions had to respond to needs associated with Hurricane Hugo.

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<sup>6</sup>States Can Be Better Prepared to Respond to Disasters (CED-80-60, Mar. 31, 1980).

One of the five states we reviewed did not meet FEMA's exercise requirements during 1 of the last 2 fiscal years. According to a FEMA report, in fiscal year 1988, Puerto Rico did not meet FEMA's exercise requirements because information provided on exercise objectives was inadequate. While Puerto Rico did meet FEMA's minimum requirements in fiscal year 1989, problems identified during its 1989 hurricane exercise surfaced again during Hurricane Hugo.

St. Croix and St. Thomas officials reported to the Virgin Islands territorial government that they encountered multiple problems during pre-Hugo exercises. These included an inadequate emergency operations plan, inadequate training, lack of resources, inadequate crowd/traffic control, lack of elected official support and personnel, inadequate message control in the emergency operations center, and inadequate warning procedures. Almost all of these problems occurred again when Hurricane Hugo hit the Virgin Islands. These problems impeded evacuation operations; caused confusion in the Emergency Operation Center; and hampered the monitoring and control of contaminated, hazardous materials. In January 1991, territorial officials commented that all warning systems in the territory are under review, and that steps have been taken to improve its emergency broadcast system.

California's August 1989 earthquake exercise—a federal/state exercise—also revealed problems, but the Loma Prieta earthquake occurred less than 3 months later, and the report identifying problems encountered during the exercise was not released until after the earthquake.



# Immediate Response Needs Met, but Staffing and Coordination Problems Existed

In four of the five states we visited, state and local governments, as well as voluntary relief agencies, fulfilled their first responder responsibilities. Following their disaster preparedness plans, they evacuated and sheltered citizens before Hurricane Hugo struck and provided emergency supplies to affected citizens immediately afterwards. In the Virgin Islands, however, the territorial government was not adequately prepared to respond to the disaster, and FEMA and other federal agencies had to act as a first responder on St. Croix.

In general, FEMA carried out its supplementary responsibilities to state and local governments. It dispatched staff promptly to the disasters in four out of five cases, and FEMA officials were on site in North and South Carolina before Hurricane Hugo struck. State officials in the five states told us that FEMA satisfied nearly all state requests for essential items on a timely basis.

However, staffing and coordination problems, particularly for FEMA, meant that the immediate response was not as efficient as it could have been. FEMA did not have enough trained staff to deal with the scope of the devastation Hurricane Hugo caused, and its disaster assistance staff was not large enough to deal with the problems of both Hurricane Hugo and the Loma Prieta earthquake 1 month later. State and local agencies also experienced staffing shortages. In addition, because responding federal agencies did not always clearly understand how to manage their overlapping responsibilities, efforts were unnecessarily duplicated.

## Responsibilities Generally Met in Four of the Five States

State and local emergency management agencies, as well as voluntary relief agencies, are expected to be the first agencies to respond to the needs caused by the natural disasters. In four of the five states, these agencies responded promptly and provided services and assistance that reflected an appropriate level of preparedness. FEMA and other federal agencies supplemented these efforts. In the Virgin Islands, however, FEMA and other federal agencies became the first responder because of the magnitude of the damage and the weaknesses in the territory's emergency preparedness.

## Most Immediate Needs Met

As their emergency operations plans require, state and local government agencies and voluntary relief agencies such as the Red Cross began providing assistance to victims immediately after the disasters struck. In fact, when it was clear that Hurricane Hugo would strike Puerto Rico,

these agencies were involved before the storm struck, helping to evacuate citizens and informing residents about damage mitigation procedures. Local emergency management officials in four states told us that their needs for essential and basic items were satisfied in most cases by state, federal, and/or voluntary relief agencies.

Before the hurricane, city, county, state, and/or voluntary relief agencies in the Caribbean and North and South Carolina helped evacuate residents from predicted storm paths and otherwise prepared their areas—declaring states of emergency, activating the emergency operations centers, or opening shelters for the impending storm. Federal and state officials credit the states' evacuation and preparation efforts for the relatively low number of deaths—39—attributed to Hurricane Hugo in North and South Carolina. In these states, several hundred thousand residents were evacuated to inland areas. In Puerto Rico, the Commonwealth government used the Emergency Broadcast System to warn residents of the storm; the System was a major reason why residents were successfully evacuated away from the storm's path. Also, a Commonwealth official said that other reasons for the successful evacuation were the prompt determination by the Governor to request such evacuation and the activation of the National Guard to conduct it.

Emergency response activities after the hurricane and earthquake were performed by various organizations, which were largely coordinated and/or managed by state government agencies. For example:

- In North Carolina, counties activated their emergency operations centers, and the state deployed more than 4,000 state employees, National Guard personnel, and state police to provide emergency services immediately after the hurricane.
- Following the earthquake, local Red Cross chapters in California provided emergency food and housing to 69,000 victims in 45 Red Cross shelters. They also provided 2,000 families with rental housing assistance and 2,100 people with hotel vouchers.
- Commonwealth government agencies in Puerto Rico opened 275 shelters to serve almost 20,000 victims and provided emergency water supplies.
- South Carolina government officials responded to hundreds of phone calls, including requests from local governments for generators, supplies, equipment, and water. They also provided emergency communications to affected counties through a statewide emergency radio network and telephone system which experienced some damage from the hurricane. At the peak of disaster operations in South Carolina, nearly 3,800

National Guard personnel participated in relief activities, according to DOD officials.

Eighty percent of the 121 local emergency management officials that we surveyed said that no requested assistance for essential items—water, food, generators, and medical supplies—was delayed long enough to hinder their ability to respond effectively. Ninety-eight percent said their emergency shelters were opened within 1 day of the disaster, and 88 percent said the major food providers, such as the Red Cross and Salvation Army, began serving food within 1 day after the hurricane or earthquake.

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### **FEMA and Other Federal Agencies Acted as First Responders in the Virgin Islands**

The Virgin Islands, and especially the island of St. Croix, presented FEMA with a particularly challenging situation. Although territorial officials commented that they deployed the police force and the National Guard before the hurricane struck, which may be credited with saving lives, the territorial government was unable to conduct many of its first responder activities on St. Croix because of the depletion of local resources and manpower caused by the extensive scale and intensity of the hurricane. As a result, FEMA and other federal agencies took charge of many of the immediate response activities on St. Croix. FEMA headquarters officials said that its first responder role was highly unusual. It expects to be a partner with the state-level government and supplement its response efforts. However, with the devastation of Hurricane Hugo, weaknesses in the territory's response plan, and very limited resources, the territorial government could not function as a full partner. Territorial officials said that they were able to assist in establishing the disaster field office and disaster application centers; provide some emergency housing for disaster victims and federal relief personnel; and collect, store, and distribute relief items provided by federal agencies. They added that the territory's disaster plan did not include a comprehensive management component for multi-island response or for single island administrative isolation because of a major natural disaster situation.

Hurricane Hugo struck the Virgin Islands on September 17 and 18, and on the 19th three FEMA officials arrived to begin response and recovery efforts. The President declared the islands a disaster area on September

20—2 days after the hurricane had passed.<sup>1</sup> FEMA opened two disaster field offices, one on St. Thomas and another on St. Croix on October 2. Disaster application centers were opened—on the islands of St. Croix, St. John, and St. Thomas—during the first week of October.<sup>2</sup> Response and recovery operations were delayed because of the geographical isolation of the Virgin Islands from the mainland United States.

The damage was severe, and many private facilities and the public infrastructure were nearly destroyed. On St. Croix, for example, almost all power and telephone lines were toppled, the water and sewage systems stopped operating, and virtually all means of communications were inoperable. Nevertheless, during the early weeks after Hugo hit, FEMA and other federal agencies arranged for the delivery and distribution of food, water tanks and purification units, and generators. FEMA, along with the local power authority, also coordinated the transportation of numerous utility repair trucks and personnel from the mainland for the reconstruction of the island's electrical system.

## **FEMA Provided Supplementary but Necessary Assistance**

Although state and local governments were responsible for and led initial response activities in most disaster locations, FEMA carried out its role by coordinating and providing federal aid when these agencies could not satisfy requests for assistance. FEMA officials said they were unfairly criticized by public officials who did not understand FEMA's supplementary disaster response role.

A report by the South Carolina Governor's Emergency Management Review Panel noted FEMA's supplementary role. The report said that FEMA plays less of a direct role in disaster response than is publicly perceived. The report said that this misperception by the public, and to a degree, state and local officials, was an element in the criticism following Hurricane Hugo.

In responding to the disasters at the five locations, FEMA established a disaster field office in each state and ultimately opened over 100 disaster application centers for recovery activities. At the peak of its

<sup>1</sup>The average amount of time between a disaster and the President's declaration decision was 23 days for disasters that occurred between Oct. 1, 1987, and Jan. 31, 1989; over half of this time elapsed between the time of the disaster and the governor's request, as discussed in *Disaster Assistance: Timeliness and Other Issues Involving the Major Disaster Declaration Process* (GAO/RCED-89-138, May 25, 1989).

<sup>2</sup>Under FEMA procedures, centers are to be opened no sooner than the fourth day after the declaration.

staffing, FEMA employed about 3,350 people, including 368 permanent, full-time FEMA staff, 855 reservists, and over 1,900 locally hired personnel.<sup>3,4</sup> About 233 employees are authorized for the disaster assistance programs—FEMA's office with primary responsibility for responding to disasters.

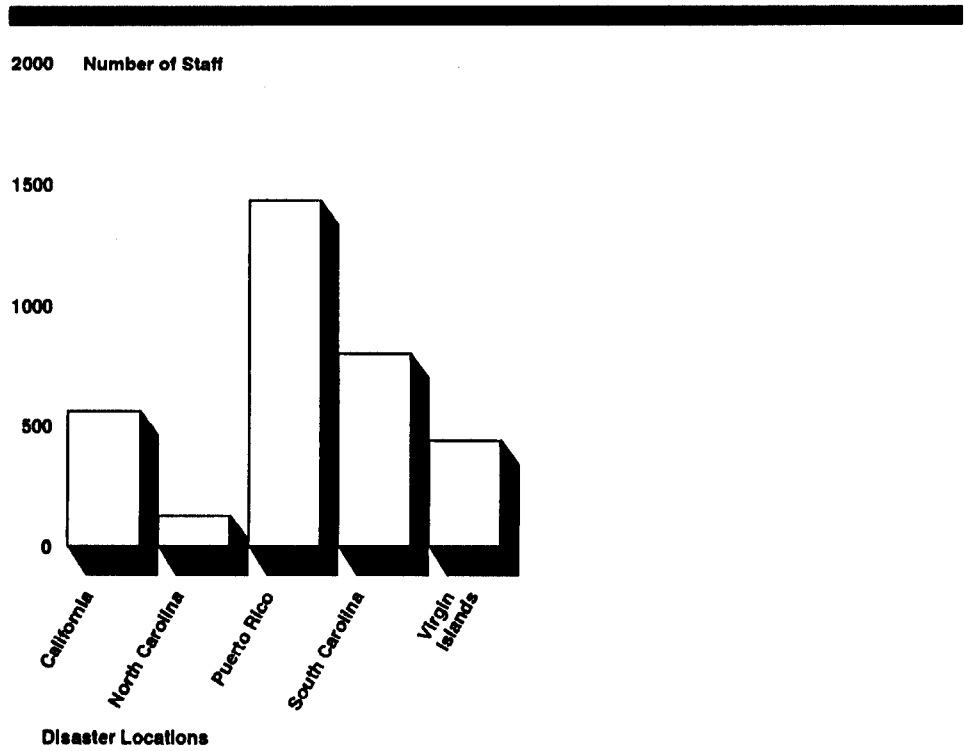
Following disasters, FEMA allocates staff on the basis of such factors as the estimated number of victims who will register for assistance. Figure 3.1 shows FEMA's peak staffing level for each disaster location. Other federal agencies, such as SBA and the Corps, brought hundreds of additional personnel to disaster locations to help with the response and recovery activities.

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<sup>3</sup> According to FEMA, the total for the five locations may include staff who were assigned to more than one location.

<sup>4</sup> A reservist is a temporary FEMA employee who may be activated to assist in federal disaster response and recovery activities at any number of major disaster locations over a 2-year appointment term. A local hire is a temporary FEMA employee appointed for 120 days to assist in federal disaster response and recovery activities for a specific major disaster at or near the employee's area of residence.

**Figure 3.1: Peak FEMA Staffing Levels for Five Disaster Locations in 1989**



Source: FEMA.

State officials at each disaster location said FEMA had been able to satisfy most of their immediate requests for essential equipment, supplies, and other assistance.

### **FEMA's Actions in Four States**

In Puerto Rico, a FEMA official reached the Commonwealth 2 days after the hurricane and immediately began working with Commonwealth officials to help organize response efforts. A temporary disaster field office was established 3 days later in San Juan, and a full-scale office was opened in the San Juan suburb of Carolina on September 27. During this time, FEMA coordinated with Navy, Army, and Coast Guard personnel to satisfy Commonwealth requests for such things as water, generators, and debris removal. On September 21, 16 of the Commonwealth's 78 counties were declared disaster areas, followed by 40 more counties on September 29, and 1 additional county on October 6. FEMA opened the first 10 of its 33 disaster application centers on September 27, 1989.

In South Carolina, FEMA contacted state officials on September 18—3 days before the storm hit. Three disaster assistance officials, including

the director of FEMA Region IV, arrived in the state the day before the hurricane to assist the Governor and state emergency management officials in preparing for the response and recovery efforts. The President signed a disaster declaration for South Carolina on September 22—just hours after the storm hit. The next day, FEMA established a temporary field office in Columbia and continued to respond to state requests for equipment, supplies, and services. By September 28, FEMA's disaster field office in Charleston was fully operational. On the same day, FEMA opened the first 5 of its 30 disaster application centers in South Carolina—6 days after the storm struck. An additional 14 disaster application centers were opened the following week. Twenty-four counties, or approximately one-half of the counties in the state, were declared disaster locations within 8 days of the storm.

In North Carolina, two FEMA disaster officials were working with state officials on a previous disaster when Hurricane Hugo struck on September 22. These officials remained in the state Emergency Operating Center to help the state prepare for Hugo recovery efforts. On September 23, FEMA sent an additional official to the Center to help with response needs. The Director of the North Carolina Division of Emergency Management credits the quick disaster declaration on September 25 to FEMA's early presence. On September 27, FEMA opened its disaster field office. Three days later, FEMA opened the first three of its nine disaster application centers.

In California, less than 3 hours after the Loma Prieta earthquake occurred on October 17, the federal government began to respond to the disaster. Within 24 hours the President declared a disaster, and FEMA immediately established a temporary field office at the Presidio of San Francisco Army Base. By October 25, it had established two full-scale field offices—one in Mountain View and the other in Santa Cruz. By October 23, 12 of the 17 disaster application centers were opened.

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## **Inadequate Number of Trained Staff Made Immediate Response Less Efficient**

Many federal, state, local, and voluntary relief agencies we reviewed experienced staffing problems that hampered the efficiency of their efforts. Federal agencies, including FEMA and SBA, did not have a sufficient number of trained personnel to perform critical functions effectively, and Red Cross officials said that they did not have enough people to manage shelter facilities adequately. Staffing shortages contributed to delays in completing essential functions, such as thorough preliminary damage assessments.

## Federal Staff Shortages

FEMA had great difficulty in staffing response operations for Hurricane Hugo and the Loma Prieta earthquake. FEMA relied on its personnel from divisions, regions, headquarters; reservists; and local hires to staff simultaneously 5 disaster field offices and over 100 disaster application centers. In some cases, personnel assigned to hurricane disasters had to be reassigned just a few weeks later when the earthquake occurred.

Although FEMA deployed regional and headquarters disaster assistance personnel to these locations, this number was not enough. FEMA also used about 260 staff members from civil defense and other FEMA organizations to supplement disaster assistance personnel. For example, 46 percent of FEMA's regional civil defense staff, along with about 25 percent of its civil defense headquarters staff participated, to some extent, in the relief efforts; about 13 percent of the national preparedness staff assisted. According to FEMA's acting regional director in New York, some of the agency's headquarters and regional staff were neither familiar with nor trained in disaster assistance.

FEMA's staffing inadequacies were most visible in the Caribbean shortly after Hugo struck. FEMA's New York regional office, which is responsible for the Caribbean, initially deployed a small crew of managers to Puerto Rico and the Virgin Islands with little equipment or other resources. Unprepared for the level of devastation, this crew was overwhelmed by the work needed to establish field offices, coordinate with other agencies, and begin the response and recovery efforts.

Later, FEMA's New York regional office assigned 15 of its 18 disaster assistance staff members to the Caribbean after Hugo struck. This was not enough, and additional FEMA staff from New York, other FEMA regions, and headquarters were assigned to help in Puerto Rico and the Virgin Islands. For example, FEMA's temporary housing officer for the Virgin Islands came from its San Francisco office, but he returned to California shortly after arriving because he was needed for earthquake recovery efforts.

FEMA also faced staff shortages in North and South Carolina. In North Carolina, for example, state officials offered to provide staff to FEMA for its disaster application centers. FEMA officials, however, declined because the agency could not provide enough of its own personnel to help train state employees.

Before the disasters, FEMA's regional offices had about 1,300 reservists on their lists, but only about 800 responded to work on the hurricane



and earthquake relief efforts. According to FEMA's Associate Director, SLPS, however, the number of reservists was not sufficient to provide enough qualified personnel to respond to several concurrent large-scale disasters. FEMA had to hire more local employees than usual who, unlike the reservists, are untrained. After the hurricane and earthquake, FEMA planned to increase the size of its reservist force to about 2,000 staff. According to a FEMA official, as of October 3, 1990, FEMA had increased its reservist roster to 2,011.

Because of their experience with these disasters, FEMA officials have identified deficiencies among the reservist force in several specific skill areas. FEMA plans to recruit reservists with specialized skills in areas such as financial management and public information. FEMA is currently preparing a profile of its reservists to better identify staffing deficiencies. This profile could then be used by regional offices to share reservists on the basis of their identified abilities and needs.

Some FEMA officials also found it difficult to recruit people with bilingual skills. FEMA did not have sufficient bilingual staff when dealing with disaster victims in these locations. FEMA officials said they plan to recruit more bilingual (especially Spanish-speaking) reservists. For example, since Hurricane Hugo, FEMA Region II has added 135 bilingual reservists to its roster.

SBA officials had difficulty in hiring sufficient numbers of qualified loan officers in the Caribbean. The SBA official in charge of the Virgin Islands office said her office experienced serious backlogs of requests for assistance because sufficient staff were not available.

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### **Most FEMA Staff Do Not Have Disaster Assistance Skills**

Most of FEMA's staff do not have skills in responding to natural disasters because they do not work on disaster assistance programs. Under the Civil Defense Act, FEMA has a clear responsibility to prepare the nation's government, population, and resources for survival against attack, nuclear or otherwise, and natural disasters. According to FEMA, it can provide for "dual use" of civil defense resources for natural disaster preparedness and response if such use does not interfere with civil defense purposes.<sup>5</sup>

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<sup>5</sup>Dual use means that disaster preparedness resources may be used for all types of disasters, including attack, and natural or technological disasters, rather than for only one type of disaster.

**Chapter 3**  
**Immediate Response Needs Met, but Staffing**  
**and Coordination Problems Existed**

FEMA's headquarters staff from nondisaster assistance programs received no training in natural disaster response prior to these disasters. Because of the shortages in trained staff that were highlighted during the Hurricane Hugo and the Loma Prieta experiences, FEMA has begun cross-training full-time, nondisaster assistance program staff from various units within FEMA so they could be used whenever disasters extend beyond the capability of the immediate regional and headquarters disaster assistance program staff. FEMA has, thus far, conducted six sessions as part of its cross-training program for nondisaster assistance staff.

Table 3.1 shows the participation rates of nondisaster assistance program employees who have attended disaster assistance training, as of December 1990.

**Table 3.1: Nondisaster Assistance Staff Participation in Disaster Application Center Training**

Organizational unit	Staff participating		Total staff in unit
	Number	Percent	
Office of Training	54	42	130
Federal Insurance Administration	33	30	109
Office of Administrative Support	18	33	54
SLPS Directorate <sup>a</sup>	20	12	164
National Preparedness Directorate	16	7	240
Office of Acquisition Management	4	11	35
Office of the Comptroller	5	6	85
Office of the Chief of Staff	1	20	5
Office of the General Counsel	1	5	20
Office of Personnel	4	7	58
Office of Regional Operations	1	20	5
External Affairs Directorate	1	5	21
Office of the Director	0	0	4
Office of the Inspector General	0	0	25
Office of Security	0	0	33
U.S. Fire Administration	0	0	17
<b>Total</b>	<b>158</b>	<b>16</b>	<b>1,005</b>

<sup>a</sup>Includes six civil defense staff; excludes disaster assistance program staff.

Source: Compiled by GAO from FEMA data.

**State and Voluntary Relief Agencies Had Similar Staffing Problems**

Some state agencies and the Red Cross also experienced problems in assigning adequate numbers of qualified personnel to disaster response activities. State and local government officials said that they were overwhelmed by the extent of the damage caused by the disasters and could

not provide adequate staff resources. In Puerto Rico, for example, an initial shortage of Commonwealth staff hampered emergency food and shelter operations. The Commonwealth's emergency preparedness plan called for the Commonwealth Department of Housing to operate shelters, but the Department could not at first provide enough staff to operate, and in some instances to open, all the shelters. A shortage of these staff occurred, in part, because many of the Commonwealth's Department of Education employees who were in charge of preparing and serving food in the shelters did not report for work because they were victims themselves. A Commonwealth official said that when the Governor requested that employees of all emergency-related agencies report to work, the staffing problem was immediately corrected.

In addition, California staff responding to the Loma Prieta earthquake were not adequately trained to handle incoming calls for assistance and to keep track of requests for assistance. For example, the Office of Emergency Services' regional office handling the response had six permanent staff members—the normal complement—to respond to the earthquake. The state said that this region is not staffed to handle a major disaster. The region pooled resources from other agencies, such as the local fire and police departments. An official told us that, as a result, much of their response was spontaneous rather than well planned and executed.

The Red Cross also experienced staffing shortages. Nationwide, the Red Cross provided services at over 800 shelters to over 200,000 people affected by the disasters. According to Red Cross officials, the almost consecutive occurrence of large-scale disasters in five states stressed the organization's resources and made it almost impossible for the organization to meet its standards for prompt, effective service. We found the following problems:

- In Puerto Rico, the Red Cross was unable to manage all of the shelters as specified in the Commonwealth's emergency plans, according to Commonwealth and local government officials. The 57 permanent Red Cross staff and the small volunteer force in Puerto Rico were not enough to provide adequate service.
- In California, Red Cross officials said that response personnel were not adequately trained to deal with the needs of ethnic minorities. In its self-assessment, the Red Cross said that its staff was culturally insensitive to victims, and did not have appropriate bilingual skills to serve some communities.

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The national headquarters of the American Red Cross evaluated its performance. Among other things, it is increasing its training and staffing, and plans to recruit more minorities to meet the needs of culturally diverse disaster victims.

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## **Response Activities Hampered**

In any disaster it is important that response agencies have a clear understanding of their roles so that they (1) appropriately coordinate their efforts, (2) use resources efficiently, and (3) promptly help victims. Although federal, state, and local agencies coordinated their efforts reasonably well in California and North Carolina, they did not do so in the Caribbean and South Carolina. Coordination difficulties were often exacerbated by organizational problems, and inoperable and inadequate communications systems. In some cases, assistance was delayed, processing of assistance requests was hampered, and assistance efforts were duplicated.

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## **Roles and Responsibilities of Some Federal Agencies Not Well-Coordinated**

Many federal agencies have disaster assistance authority; FEMA is responsible for providing an orderly means of channeling this assistance to state and local governments. To this end, FEMA has memoranda of understanding with several federal agencies that have emergency authority; coordinates with 26 federal agencies participating in the federal natural disaster response plan; and conducts meetings with federal agencies during and after disaster relief activities. However, inadequate coordination between FEMA, the Department of Education, and the Soil Conservation Service (SCS), for example, contributed to delaying financial assistance to schools and caused duplicate inspections in some states.

In repairing schools, for example, FEMA and Education, with overlapping authorities, did not develop an efficient coordination system for providing assistance. These agencies do not have a memorandum of understanding clarifying their respective roles and responsibilities in emergency situations. According to a federal coordinating officer, FEMA and Education have to coordinate their roles at each disaster to determine their respective responsibilities when a disaster damages public schools. As a result, duplicate damage inspections were conducted and disaster assistance to eligible school districts was delayed, as discussed in chapter 4.

Similarly, in South Carolina, coordination problems arose between FEMA and SCS about overlapping responsibilities for debris removal from

drainage ditches. In South Carolina, FEMA and SCS each inspected the same drainage ditches/canals and watercourses. FEMA and SCS have met to work on a memorandum of understanding at the national level to help avoid coordination difficulties in future situations.

Finally, uncertainty between FEMA and EPA over EPA's role in a natural disaster delayed response to potential environmental hazards created by Hurricane Hugo in the Virgin Islands. Potentially serious hazards—water supply contamination, possible chemical and asbestos contamination, oil spills, and sewage treatment problems—threatened the Islands. Because they did not have a mission assignment from FEMA, EPA officials said they were unable to respond immediately. FEMA regional officials said EPA has its own authority to respond to hazards, such as those caused by Hugo. EPA eventually performed a variety of tasks at FEMA's request, 4 weeks after the disaster.

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### **Organizational and Communications Problems Hindered Response Activities**

Response agencies' abilities to coordinate activities were hampered by organizational and communications problems, as evidenced at the state level in South Carolina. Immediately after Hurricane Hugo struck, two state emergency operations centers were opened in the capital. The State Emergency Preparedness Office operated one center, and the Governor established the other center in his office. The Governor did this to have immediate, direct control over the state's response efforts and handle requests from state and local officials, which, according to the Governor's Office, the emergency operations center was not able to handle immediately after the hurricane struck. The operation of two separate emergency centers was contrary to the state operations plan, and a duplication of effort. For a short period of time, local officials seeking aid were uncertain about where they should make their requests. According to a state emergency preparedness official, five county requests to the state for assistance were unfilled because of coordination problems between the two centers. About 10 days after the disaster, the State Emergency Preparedness operating center received the first of several calls from mayors or other local officials inquiring about their requests for assistance. Officials in the emergency operations center then called the Governor's Office and learned that it had its own operations center. Many local requests had been made to the Governor's operating center. Initially, this organizational division caused some difficulties but was subsequently corrected: the two operations centers coordinated their efforts so requests for assistance would be forwarded to the State Emergency Preparedness Office.

The Governor's Office stated that the Office of Emergency Preparedness and the Governor's Office were in constant contact from the beginning of the crisis. The Governor's Emergency Management Review Panel reported:

During Hurricane Hugo, the Governor's Office experienced information difficulties with the Emergency Preparedness Division. These problems were a direct result of the magnitude of the damage and the overwhelming influx of information that the Emergency Preparedness Division (EPD) received. Of particular note was the difficulty in communications and information regarding county and municipal needs. A need is seen for the Governor's Office and the state EPD to strengthen the coordination and prioritization of resources. The necessity for another line of communication became clear as the magnitude of Hugo was realized. As a policy, the Governor's Office command post sought to alleviate the pressure on EPD that county and municipal demands placed on the system. The Governor's Office called local officials for updates and surveyed these officials concerning their needs for critical materials such as supplies, generators and manpower. This avenue can be seen as a supplemental role necessary to assist local governments that were in need of greater, more expedient assistance from the state.

The report concluded that "Better communications could be achieved through a more direct liaison relationship between the Governor's Office and the Emergency Preparedness Division." Similarly, the Emergency Preparedness Division's after-action report on Hurricane Hugo stated that "the existence of [two] operations centers created coordination problems during emergency response and the early stages of recovery" and recommended improved coordination.

Coordination activities were also hindered by communications systems that became defective or inoperable after the hurricane. Damage to electrical and telephone systems in South Carolina impeded communication between agencies and hampered the ability of state and local personnel to respond effectively to the disasters, according to FEMA officials. Many member radio stations in the state's Emergency Broadcasting System became inoperable because of power outages, the lack of generators, or physical equipment damages. The telephone system, which was heavily damaged by the storm, was unable to handle the large number of assistance calls to the state's emergency operations center. South Carolina is planning a new emergency communications network.

In the Virgin Islands, the total breakdown of communications contributed to the previously discussed delay in the disaster declaration, and made a difficult response situation even worse. FEMA officials on St. Thomas, for example, were frequently unable to communicate with their counterparts on St. Croix. Agency officials at all levels had difficulty in

communicating with each other immediately after the storm until FEMA augmented its communication capabilities with emergency communications equipment from DOD and the Forest Service.

Although our survey of local managers did not identify problems in receiving requested assistance, about 40 percent of the 121 local emergency management officials we interviewed said that they experienced some to great difficulties with communications in disaster response. Of this 40 percent, half were planning to make changes to their operations plan to help correct these difficulties.

### **Immediate Emergency Response Support Team**

To address problems in immediate response, such as those experienced with communications, FEMA and others have proposed the creation of a federal response team. This team would have the ability to react immediately, at a governor's request and upon FEMA's concurrence, to provide technical assistance and to aid victims until additional resources from other federal, state, and local agencies becomes available. Such a team could be made available even before a disaster is declared to supplement state and local first response efforts at a critical point in time, and to help prepare for the more comprehensive disaster recovery phase. FEMA officials said that the Congress would have to amend the Stafford Act to authorize FEMA to deploy staff to disaster areas prior to a major disaster declaration. FEMA is developing a legislative proposal.

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### **Disaster Response in the Virgin Islands Was Complicated by Law and Order Problems on St. Croix**

After Hurricane Hugo, widespread looting occurred on St. Croix. Because of confusion over leadership, roles, and priorities within the Virgin Islands' National Guard, law enforcement was poor or nonexistent. The territorial government requested U.S. military personnel to restore law and order. Poor coordination and communications also contributed to the breakdown of law and order on St. Croix.

According to a territorial official, looting began because Islanders needed emergency supplies and materials, but it escalated as looters took nonessential items such as appliances. Law enforcement agencies did not immediately respond to the looting because

- law enforcers were themselves affected by Hurricane Hugo;
- National Guard officials released their personnel to prepare their own homes for the storm, with no specific return time and date; and
- National Guard personnel who returned after the storm were ineffective because of a lack of National Guard leadership.

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Immediately after the hurricane struck, territorial and federal officials agreed that the Guard's response to the situation on St. Croix was inadequate and that a stronger federal presence was necessary. Pursuant to the Governor's request for assistance, the federal government sent 1,200 Department of the Army personnel, agents of the Federal Bureau of Investigation, U.S. marshals, and other law enforcement personnel 3 days after the hurricane to help quell looting and restore order. The troops stayed for over 8 weeks and, in addition to restoring order, played a major role in response activities by distributing water and food, clearing debris, and providing other supplies and services.

By December 1989, the National Guard Bureau, a DOD headquarters' unit, issued a report on the Virgin Islands' National Guard's performance before, during, and after the hurricane. It concluded that the Virgin Islands' National Guard leadership failed in performing its emergency role by not adequately preparing for natural disasters and by not assembling its forces upon notification of an alert. The report made numerous recommendations and discussed areas needing additional review. For example, the report said that the Virgin Islands' National Guard's emergency preparedness plan used for Hurricane Hugo was too general and lacked good operational planning. The Guard intends to form emergency response teams, supplied with communications equipment, to assist local governments in their immediate response activities. The teams will also report on the status of the disaster to the emergency operations center. Further, to provide additional personnel in catastrophic or near-catastrophic disasters, the National Guard intends to develop agreements with other National Guard units in neighboring states.



# Recovery Issues Need More Attention

Recovery has been a troublesome phase of FEMA's disaster relief operations in the aftermath of Hurricane Hugo and the Loma Prieta earthquake. Because of inefficient operations and/or uncertainty over roles and responsibilities, longer term recovery assistance has been marked by delays, duplicate payments, and incomplete responses to the needs of disaster victims.

Three areas—administrative matters, coordination between federal agencies, and housing for low-income people—need improvement to help ensure that future disaster recovery efforts are handled more efficiently and effectively. Administratively, because FEMA, other federal agencies, and state governments do not have compatible computer systems, duplication occurred in registering people for assistance. Coordination problems continued into the recovery phase, especially between FEMA and Education, and FEMA and SCS. These agencies duplicated inspections, and needed assistance was delayed to repair damaged schools.

Finally, the recovery phase after these two disasters presented new problems for FEMA: the type and amount of housing assistance it can provide to low-income people in areas where affordable housing is scarce. Advocacy groups in California took legal action against FEMA, alleging that FEMA discriminated against low-income victims. Although the matter was recently settled, little has been done to repair and/or replace low-income housing in the areas damaged by the earthquake. Also, one FEMA approach to providing housing assistance—cash grants for construction of permanent housing for disaster victims—does not conform to the requirements of the Stafford Act.

## Magnitude of the Disasters Highlighted Administrative Inefficiencies

In recent years, FEMA has tried to streamline administrative processes to expedite assistance to disaster applicants.<sup>1</sup> However, the large number of applicants seeking relief from Hurricane Hugo and the Loma Prieta earthquake demonstrated that administrative problems continue.

<sup>1</sup>FEMA's efforts to improve the individual assistance programs are detailed in *Disaster Assistance: Program Changes Expedited Delivery of Individual and Family Grants* (GAO/RCED-89-73, Apr. 4, 1989).

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## Incompatible Computer Systems

Federal and state assistance agencies had problems coordinating applicant registration information because of incompatible computer systems. As a result, there were multiple entries, updating of the same data, delays in information-sharing, and difficulties in determining whether duplicate payments were made.

Most agencies administering assistance to individuals or businesses—FEMA, SBA, the state agency administering the individual and family grant program (IFG), and the Red Cross—had incompatible computer systems or systems not integrated with one another. In California, for example, updates on SBA data had to be manually forwarded to and reentered by FEMA. Updates of FEMA and IFG information had to be manually transmitted and reentered in all five states. This delayed information-sharing between the two agencies and resulted in duplication and data inconsistencies between them.

Agency officials said they support developing a computer system that would be compatible between the agencies. In December 1989, 17 governors from the Western Governors' Association recommended that FEMA work with state agencies and the Red Cross to develop and implement the most feasible and economical means for electronically sharing disaster-related information with state agencies and the Red Cross. Similarly, a South Carolina program administrator reported that South Carolina officials had insufficient time to develop an adequate automated system to meet the IFG program reporting standards, and these officials recommended that FEMA consider developing a standardized computer system for the states.

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## Duplicate Applicant Registrations

FEMA's computer system did not always initially screen registrations for duplicates or verify applicants with the same mailing address. In California and South Carolina, the verification of applicants with duplicate addresses was not performed until a month or more after the disasters.

Over 3,000 of the first 10,000 registrations in California were duplicates because some people who originally registered by telephone registered again in person or by telephone, according to a FEMA official. After receiving complaints from state IFG program officials that they were receiving hundreds of duplicate cases, FEMA implemented an address check to identify duplicate registrations.

However, duplicate registrations and duplicate inspections of damaged properties were not identified, resulting in some duplicate payments.

FEMA officials said they will try to recover about 500 duplicate temporary housing assistance payments in South Carolina and about 300 in California. Similarly, as a result of duplicate registrations and inspections, California officials said about 4,000 IFG grants were either duplicate, excessive, or given to the wrong person.

In California, more than one applicant living at an address caused duplicate inspections and payments. About 23 percent of the registrants in California were multiple registrants by street address, and 10 percent were multiple registrants by housing unit. When more than one applicant at an address applied for aid, duplicate inspections of properties were sometimes made. While FEMA asked, at the time of registration, for the names of all the residents, FEMA officials said their computer system did not match registrants or inspections by address. Further, according to California IFG officials, in many cases several people living in a single residence filed separate claims for the same damage. As a result, individuals who lived in one room of the house were paid for damages to the entire dwelling. To help with such problems, a FEMA headquarters official said the agency is designing a system to screen duplicate registrations by Social Security number.

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## Duplicate Responsibilities and Coordination Problems Contributed to Delayed Assistance

The lack of adequate coordination between certain federal agencies with similar responsibilities for repair and/or restoration of public facilities created problems for affected communities trying to recover from the recent natural disasters. In California, North and South Carolina, and the Caribbean, assistance was delayed or not provided, partly because of coordination difficulties between FEMA, Education, and state agencies and/or between FEMA and SCS.

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## FEMA and Education Responsibilities Overlap

The declaration of a major disaster under the Stafford Act triggers aid to school districts from two federal agencies. Under section 406(a) of the Stafford Act, FEMA can provide funds for the repair or reconstruction of a public facility damaged by a major disaster, including public buildings used for educational purposes. Under section 16 of the Education Act (P.L. 81-815), Education can provide federal subsidies to repair or reconstruct public school facilities.

Neither the Stafford Act nor the Education Act addresses this division of authority between the two agencies. However, the legislation suggests that the Congress intended to give primary responsibility for disaster

assistance to schools to FEMA and secondary responsibility to Education. The Education Act states that schools must first use funds provided by all other sources (local, state, or other funds, including FEMA assistance and insurance coverage) before Education can consider applications for assistance. In practice, however, Education has provided assistance for damage to instructional facilities, such as classrooms, and FEMA has provided assistance for repairs to administrative facilities and other noninstructional areas, according to a FEMA headquarters official.

**Assistance for School Repairs  
Delayed**

The split responsibility for school repairs caused inconsistencies, duplication of effort, and confusion in paying for the repair of damaged schools in California, North and South Carolina, and the Virgin Islands. In addition, some FEMA and Education officials were unclear about their respective responsibilities for certain types of assistance. The two agencies could not agree on the role each agency would play in assisting school districts to repair facilities. In addition, duplicate inspections of damages were performed by the two agencies or by the state.

School districts in California and North and South Carolina received no funds for up to 8 months after the disasters. Education surveyed most school damage in California 1-1/2 months after the earthquake. But because of coordination and other problems, such as duplicate inspections between the school districts and state and federal agencies, the 45 California school districts eligible for Education assistance did not receive approval of their claims totaling almost \$10 million until June 1990. Education officials also said California payments were delayed while the state considered enacting a one-fourth of 1 percent sales tax to cover the costs of the disaster, which may have limited Education's responsibility to provide financial assistance to California school districts. As of October 1990, 14 school districts had received about \$3 million from Education, and California had spent about \$1 million of this amount, according to Education officials.

Delays in funding created hardships for some school districts. For example, a San Francisco technical school was relocated to an elementary school for more than 8 months while awaiting Education funding for repairs. According to a school district official, the technical school's educational program suffered because the elementary school had no laboratories or shops. Education officials said that this school district received \$2.7 million in May 1990, and had spent about one-third of this amount as of October 1990.

None of the 48 school districts in South Carolina and 7 in North Carolina that applied for Education assistance had received any funds as of October 1990. Education estimated damage at \$24 million for school districts in South Carolina and \$1.7 million for school districts in North Carolina. Assistance from Education was delayed in South Carolina while Education waited for insurance claims to be paid from a comprehensive state insurance policy that covered all school districts. Education estimates that this policy will cover about 90 percent of the school damage in South Carolina. Education officials said that its North Carolina payments were delayed by an insurance settlement procedure similar to that of South Carolina's. Also, unlike in South Carolina, assistance from FEMA and Education was delayed in North Carolina because FEMA suspended its processing of damage survey reports, which show the extent of damage and amount of reimbursement, until the roles of the agencies were clarified, according to a FEMA regional official.

Shortly after completing its inspections, Education provided the Virgin Islands with \$4.9 million in December 1989, and an additional \$43 million by late spring 1990. Education and territorial officials reported that the Virgin Islands is having difficulty in awarding these funds and progressing on their extensive damage repair plan in part because a shortage of contractors has delayed the award of repair contracts.

According to some FEMA and state officials, to improve the administration of the program and to help provide assistance to school districts promptly, one federal agency should deal with the schools. Some favored FEMA as the agency to provide disaster assistance to school districts because FEMA has the staff and the expertise. FEMA officials also believe that FEMA is more accessible to state and local officials because it has staff in the field, while Education handles disaster assistance from its headquarters. In addition, FEMA provides assistance to other public and nonprofit facilities, including colleges, universities, and private schools. One state recommended that Education should have responsibility for schools, including all damage inspections, because of the special interest and knowledge base that Education possesses. Education officials said that it should retain responsibility for parts of the program, such as those dealing with the loss of revenue and increased operating costs caused by the disaster. FEMA and Education are considering ways to improve assistance to the school districts.

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## FEMA and SCS Disagreed on Responsibilities

Debris from Hurricane Hugo remained in drainage ditches/canals and watercourses in South Carolina 10 months later because of inadequate coordination between FEMA and SCS, according to a state program official. Under its Emergency Watershed Protection Program, SCS can remove debris related to natural disasters to help relieve impaired watersheds and help prevent flooding or erosion as well as imminent hazards to life and property.

Under the Stafford Act, FEMA also has authority for debris removal from publicly and privately owned areas. According to a FEMA headquarters official, generally a stream or drainage ditch that is normally maintained would be eligible for FEMA funding but permanent improvements to the ditch are not eligible for FEMA funding.

FEMA and SCS officials agree that their two agencies did not adequately coordinate such activities after Hurricane Hugo. In South Carolina, for example, SCS was not invited to FEMA's meeting with state and federal officials to promote coordination with the federal agencies. As a result, SCS made damage assessments independently of FEMA, and FEMA did not use SCS inspection reports. In some cases, the inspections were duplicated by FEMA.

When SCS and FEMA tried to coordinate their work—about 4 months after the hurricane—they disagreed on who would pay for the work proposed by SCS. FEMA does not pay for improvements to the water flow of the ditch, the walls of the ditch, or the areas alongside the ditch used for maintenance, so it questioned SCS' estimates when it believed the estimates included such costs. SCS officials said their estimates did not include such costs.

In June 1990, an SCS official estimated that over 1,400 miles of drainage ditches/canals and watercourses in disaster-stricken counties in South Carolina still needed cleaning. According to a state official, 9 months after the hurricane, little debris had been removed and the remaining debris created mosquito infestations, and caused potential fire and health hazards. In the Caribbean, FEMA and SCS also had coordination problems that delayed the removal of debris that was eventually cleared by SCS.

A FEMA headquarters official said that because the SCS program for debris removal is similar to the FEMA program, the agencies are considering signing an agreement to improve future coordination. SCS and FEMA officials have met to discuss a memorandum of understanding to clarify

coordination issues but had not completed negotiations as of December 18, 1990.

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## Low-Income Housing Assistance Frequently Not Provided

Hurricane Hugo and the Loma Prieta earthquake destroyed a substantial amount of housing, particularly low-income housing. The magnitude of the destruction raised a number of questions about FEMA's role and responsibilities in providing long-term housing assistance.

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## FEMA's Authority for Providing Housing Assistance

Under the Stafford Act, FEMA is authorized to provide assistance for emergency shelter, nonprofit housing, and temporary housing. However, FEMA officials said that the agency does not have the authority to restore or permanently replace damaged low-income housing. More specifically:

- Section 403 authorizes federal agencies to provide "emergency shelter." FEMA interprets emergency shelter to mean temporary shelter and said it could not use this provision to replace rental units for long-term use.
- Section 406 makes damaged public or private nonprofit housing eligible for FEMA assistance; however, most of the earthquake-damaged units were not eligible because they were privately owned.
- Section 408 authorizes FEMA to provide temporary housing assistance to individuals displaced by a disaster. Under this section, FEMA provides mobile homes or readily fabricated dwellings as "temporary housing."

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## Damaged Rental Units Have Not Been Restored in California

FEMA officials said the Loma Prieta earthquake was the first large-scale disaster in a major urban area where the problem of repairing or replacing low-income housing occurred. The Loma Prieta earthquake struck an area that had a serious shortage of affordable rental housing for low-income residents<sup>2</sup> and a low vacancy rate for all housing.<sup>3</sup> According to Department of Housing and Urban Development (HUD) statistics, the earthquake destroyed about 1,000 low-income units and caused major damage to another 3,000 low-income units.

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<sup>2</sup>HUD defines affordable rent as not more than 30 percent of income for someone with 80 percent of the median income of the area, adjusted for family size.

<sup>3</sup>HUD considers vacancy rates below 5 percent (4 to 6 percent, depending on the rate of growth in the area) to be low. In areas hardest hit by the earthquake—Alameda, San Francisco, and Santa Cruz counties—vacancy rates prior to the earthquake ranged from 0.8 to 2.9 percent.

Most of these privately owned units will not be restored or replaced without government assistance, partly because the repair costs exceed the revenue that could be generated through affordable rents, according to local and federal housing officials. Although owners of damaged rental housing may have been eligible for SBA disaster business loans, their repayment expenses could force them to increase rents, thereby taking the units from the low-income housing inventory. A FEMA official said the Stafford Act does not authorize the agency to restore or replace the damaged units.

A FEMA official said that HUD, not FEMA, should be responsible for restoring or replacing permanent housing. However, FEMA did not believe it had the authority to direct HUD to do so, and HUD did not agree to assume the responsibility. Although section 402 of the Stafford Act authorizes FEMA to direct federal agencies to use their authority and resources, with or without reimbursement, to support state and local assistance efforts, FEMA interprets this section as applicable only to short-term emergency disaster needs instead of long-term needs, such as permanent replacement of damaged housing. As a result, FEMA did not request HUD to assist in housing recovery efforts following the earthquake or to provide disaster funds.

In February 1990, HUD Region IX officials proposed using (1) \$44 million in federal funds to help rebuild damaged or demolished housing and (2) 2,000 5-year rental assistance vouchers to aid victims while the housing was being rebuilt. However, HUD headquarters did not fund this proposal. HUD allocated 500 rental assistance vouchers and 664 moderate rehabilitation certificates to the earthquake disaster area. It took 4 months to provide the vouchers, and local authorities in one locality had not received the rehabilitation certificates 8 months after the earthquake.<sup>4</sup> The vouchers provide rental assistance to some low-income renters, and the certificates can help restore buildings with minor damage, but neither program addresses the need to replace or restore the destroyed or seriously damaged units.

To help address the problem of repair or restoration of damaged rental units, the state established the California Natural Disaster Assistance Program for Rental Properties to provide low-interest, deferred loans

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<sup>4</sup>The moderate rehabilitation program is designed to provide financial assistance to private parties to upgrade low-income rental properties in their early stages of deterioration, restore them to standard conditions, and maintain them at that level. The program's objective is to preserve the supply of affordable housing where needed. This program is detailed in *Rental Housing: Inefficiencies From Combining Moderate Rehabilitation and Tax Credit Subsidies* (GAO/RCED-90-168, June 19, 1990).



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for rehabilitating these units. To be eligible, an applicant must have first used any available funds from FEMA, SBA, and the state. While these loans are not specifically targeted for low-income units, several owners of damaged low-income housing have applied for aid and may be assisted. Some owners of damaged low-income rental units may receive loans through this program, but because it was designed as a measure of last resort, assistance was delayed, pending the outcome of a lawsuit against FEMA—settled in December 1990, which is discussed in the following section.

Similarly, the state offered low-interest deferred loans of up to \$30,000 under the California Natural Disaster Assistance Program for Owner-Occupants, as a last resort to homeowners whose needs were not met by FEMA, SBA, and the IFG program. While the program provided needed assistance to homeowners, damage to some homes may exceed the \$30,000 maximum, and the program director said the program was just beginning to receive applications 6 months after the earthquake.

HUD's role in responding to future disasters would change if legislation introduced in the House of Representatives in August 1990 were enacted. Under H.R. 1180, sections of the United States Housing Act of 1937 (50 Stat. 888) and the Housing and Community Development Act of 1974 (P.L. 93-383) would be amended to give HUD the authority to provide disaster assistance from funds appropriated specifically for that purpose.

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### **FEMA's Interpretation of the Stafford Act and Administrative Problems Impeded Providing Temporary Housing Assistance**

FEMA's interpretation of the Stafford Act and administrative problems have impeded providing housing assistance in California and St. Croix. In California, FEMA's eligibility criteria for aid excluded some low-income victims, and the aid provided to others did not meet their temporary housing needs. Language and literacy barriers also hindered FEMA's efforts in California. On St. Croix, efforts to repair and rebuild victims' homes have also been delayed because of administrative problems.

After the Loma Prieta earthquake, FEMA required victims seeking eligibility for temporary housing assistance to document the fact that they had lived at a particular location for at least 30 days. Victims who shared housing and those living in single room occupancy (SRO) units had problems meeting this residency requirement. According to local officials, (1) SRO residents often could not afford to stay in an SRO building for an entire month; (2) owners of SRO buildings often did not allow residents to stay longer than a full month, to prevent them from

gaining tenancy rights; (3) residents sometimes shared a room with another resident and could not document their own tenancy; or (4) residents had difficulty getting documents from damaged buildings or former landlords. FEMA officials said that only 353 victims qualified for and received temporary housing assistance, out of 859 living units in 8 of the severely damaged SRO buildings in Oakland.

In November 1989, tenant advocacy groups filed a class action lawsuit against FEMA, charging that FEMA discriminated against low-income victims of the earthquake who occupied SROs or other transient accommodations. In a court-approved settlement agreement, FEMA agreed to replace damaged low-income housing under section 403 of the Stafford Act. The agreement stipulated that the work had to be completed within 106 days. Since many of the damaged units cannot be repaired or replaced within the specified time frame, local officials said that few projects will qualify for FEMA aid. Action on the legal settlement was delayed while disagreements between FEMA and the plaintiffs were argued before the court. Eleven months after the earthquake, only one project had been approved for funding. On December 5, 1990, in order to expedite implementation of the settlement agreement, the parties entered into a memorandum of understanding that could require FEMA to provide up to \$23.04 million for replacing 2,070 low-income housing units made uninhabitable by the earthquake.

In addition, communication barriers hindered FEMA's efforts to provide assistance to some victims in California. According to state and local officials, many victims were unable to understand and meet FEMA's requirements because they did not understand English well and/or had limited literacy. For example, a local official complained that instructions on temporary housing assistance checks were too complicated for disaster victims with limited reading skills. Also, the instructions were initially only presented in English, which created problems for many Hispanic victims.

FEMA officials recognized the need for alternative forms of temporary housing assistance in South Carolina and provided 230 mobile homes. In California, however, FEMA did not recognize the shortage of alternative low-cost housing when making decisions about the type of temporary housing assistance needed. Initially, FEMA decided that rental assistance checks would be the only form of temporary housing assistance provided to displaced renters, not recognizing that only a limited number of affordable rental units were available. Consequently, many victims remained in Red Cross shelters for long periods of time. After several

weeks and considerable community pressure, FEMA agreed to provide 150 mobile homes; primarily for the Watsonville area (south of San Francisco) and began formulating plans to provide funds for emergency shelter for other areas. Few occupants of the mobile homes in California were able to purchase the FEMA homes as permanent housing because they could not obtain land for the mobile homes. However, as of early July 1990, in South Carolina, occupants of over 200 of the 230 mobile homes were able to purchase the mobile homes they occupied.

Administrative problems also occurred in providing housing assistance to disaster victims in St. Croix. FEMA assisted victims by making available temporary, makeshift housing; renovating government-owned housing; and importing 400 mobile homes. Most victims who sought FEMA assistance were helped to repair or rebuild their homes. However, delays occurred in rebuilding homes because of contracting difficulties, problems proving land ownership, and shortages of land suitable for construction. Ten months after the hurricane, FEMA had not provided housing assistance to over 400 families.

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### **One FEMA Approach to Assisting Homeowners Does Not Conform to Stafford Act**

In Puerto Rico and in the Virgin Islands, FEMA's principal housing assistance differed from the assistance provided on the mainland. The assistance provided does not conform to the Stafford Act's requirements. In these jurisdictions, FEMA established "eligible-created resources," under which homeowners whose homes were totally destroyed were eligible for cash grants to build new homes, constructed in accordance with FEMA specifications to help ensure that the houses will be hurricane-resistant. The houses are owned by the disaster victims.

FEMA used cash grants for housing assistance in the Caribbean because of the relative remoteness of these locations. In Puerto Rico and in the Virgin Islands, providing mobile homes is often not as practicable a form of housing assistance as it is on the mainland. For such comparatively remote locations, transportation of mobile homes from the mainland is expensive (about \$8,000 per mobile home) and takes a considerable amount of time, according to FEMA. Also, once the homes arrive, the government must spend additional time and money to prepare the mobile homes to be hurricane-resistant.

Section 408 of the Stafford Act authorizes "temporary housing units" to disaster victims who "require temporary housing." The statute also authorizes the federal government, following the temporary assistance

period, to sell the houses to the disaster victims who occupy them “at prices that are fair and equitable, as determined by [FEMA].”

However, under FEMA’s eligible-created resources approach, housing is made available to disaster victims on a permanent, not a temporary, basis. FEMA never establishes an ownership interest in the houses; the houses are owned by the disaster victims. As owners, they are entitled to reside in them permanently. Thus, the eligible-created resources approach does not conform to the requirements of section 408. FEMA, however, disagreed with this conclusion and took the position that the Stafford Act provides the flexibility to use eligible-created resources for housing.

# Lessons Learned and Actions Planned

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As a result of the severe damage from Hurricane Hugo and the Loma Prieta earthquake, officials from all levels of government—federal, state, and local—and the voluntary relief agencies looked critically at their performance in response to these disasters. They have identified many areas that could be improved in the three phases of disaster management—preparedness, response, and recovery. Many of these agencies have already taken some actions to address the identified problems; other actions are planned.

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## FEMA

The lessons FEMA learned affect three areas of disaster management: preparedness, response, and recovery.

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## Mobile Disaster Field Offices

To more effectively address situations where it may have to assume an immediate response role—as it did in the Virgin Islands—FEMA is currently developing specifications for a mobile, self-sufficient disaster field office. FEMA believes that such an office would allow it to more effectively respond to catastrophic and near-catastrophic disasters when the immediate establishment of a more permanent disaster field office is not possible. This mobile office would have space and lodging accommodations for about 20 FEMA disaster assistance staff, and include critical items, such as food, water, generators, and communications equipment.

FEMA plans to request funding for a mobile, self-contained disaster field office in its fiscal year 1992 budget proposal. To enable such an office to perform immediate response operations in addition to normal recovery operations, FEMA is also considering modifying the organizational structure of the disaster field office components so that some response functions can be delegated to other agencies when appropriate.

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## Establishment of a Permanent Office in the Caribbean

FEMA is considering establishing a permanent field office in the San Juan, Puerto Rico, area with a small staff to provide more expeditious assistance in the Caribbean area and to help reduce administrative costs of long-term disaster recovery efforts.

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## Communications

FEMA has taken actions to help ensure that it, the states, and local governments have compatible, reliable, and mobile emergency communications capabilities. For example, FEMA is developing guidance on purchasing antennas and towers that can be quickly erected, and it is

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retrofitting existing antennas and towers. FEMA is also providing technical and financial assistance for the purchase of cellular telephones, hand-held radios, and satellite communications systems.

In an after-action report on the Hurricane Hugo disaster operations in Puerto Rico, FEMA regional staff recommended that hand-held radios be made available to disaster application center personnel prior to the center's opening. To help improve the cost-effectiveness of its communications equipment and eliminate the need for telephone installation, they recommended that cellular phones be purchased for each center.

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### Disaster Preparedness Activities

FEMA is improving its disaster training and planning at the federal, state, and local levels. It developed a 1-week course on warning and communications systems design and is currently developing an emergency equipment inspection and maintenance course for state and local emergency managers. Further, FEMA is preparing training and equipment standards for urban search and rescue teams, and is developing a training program for elected officials that describes their roles and responsibilities when a disaster strikes.

FEMA is revising its federal response plan for catastrophic earthquakes to respond to all types of large-scale natural disasters. The plan envisioned by FEMA would provide federal agencies with preassigned missions; for example, the General Services Administration would provide logistical/resource support, and DOD would provide urban search and rescue operations in any catastrophic or near-catastrophic disaster.

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### Disaster Response and Recovery Activities

FEMA is examining ways to expedite responses to states' requests for common emergency support items such as generators, water tanks, and portable radio systems. FEMA's Puerto Rico after-action report recommended that FEMA develop lists of emergency support items, evaluate the ability of various federal agencies to provide these items, and create a standard operating procedure for obtaining the items during a disaster. A FEMA official said that the revised response plan calls for federal agencies to develop lists of emergency support items. Also, to reduce delays and costs of acquiring aircraft, the report recommended that FEMA develop a memorandum of understanding with the Forest Service regarding the availability of aircraft during a disaster and also explore with the Air National Guard the use of helicopters for disaster application centers operations.

FEMA identified a need to improve representation of the various federal, local, and voluntary relief agencies at the centers. FEMA recommended that (1) the Red Cross develop an alternate center support system, (2) the Farmers' Home Administration consider training local hires to represent the agency at centers, and (3) FEMA develop consistent plans for using the mental health crisis counseling services of local agencies at centers.

FEMA also recognizes a need to stock Spanish- as well as English-language disaster assistance registration forms to help avoid delays in the delivery of these forms to the disaster application centers.

### Changes to the Individual Assistance Programs

FEMA is considering improving the efficiency of its individual assistance programs by separating the IFG program's application process from the SBA's disaster loan program. According to FEMA, this measure may require legislative changes, and may help expedite financial assistance to disaster victims.

To streamline the verification process, FEMA is considering contract, policy, and regulatory changes that would reduce or eliminate certain requirements, reviews, and paperwork that are not considered cost-effective. For example, FEMA plans to reduce the number of quality control reviews for IFG field inspections, and it is creating a simplified, one-page form for inspecting damaged properties.

Also, FEMA regional staff, in their after-action report for Puerto Rico, recommended that IFG grant recipients not be required to purchase flood insurance to help reduce the delays and costs of application processing. The report also recommended that the teleregistration process begin immediately after a presidential disaster declaration. To help identify duplicate applications for disaster assistance and reduce printing costs, the report recommended that applicants' Social Security numbers be used as a control number on applications. To avoid duplicating disaster assistance benefits, the report recommended that FEMA issue new instructions for coordinating the IFG and SBA programs. The report also recommended that FEMA's computer system for individual assistance programs be modified to allow the Red Cross to obtain access to and enter specific information to expedite data-sharing and reduce duplication of assistance provided.

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## Public Information

To help clarify the types of disaster assistance available and the roles of the different assistance agencies, FEMA is developing a disaster information strategy. One purpose of this strategy is to improve the communications between FEMA and its constituents—disaster victims, the media, state and local agencies, and congressional delegations.

To improve the process of providing information to the media, FEMA's Puerto Rico after-action report recommended that the agency (1) deploy the lead public information officer to a disaster area along with the federal official in charge of the disaster field office prior to a disaster declaration when a disaster is inevitable; (2) assemble an information kit containing items such as updated media lists, English and Spanish dictionaries, and media release letterheads and store it in preparation for future disasters; and (3) designate one of the first telephone lines installed at a disaster field office for the public information staff.

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## American Red Cross

The American Red Cross evaluated its performance and plans to develop, and in some cases has implemented, appropriate action plans for improving its disaster relief operations. In general, the Red Cross said it needs to improve its ability to respond to catastrophic disasters and coordinate better with FEMA. The Red Cross acknowledged that it needs to better educate its chapters and the public on its services and procedures. For more efficient monitoring of donations, the Red Cross recommended (1) requesting manufacturers to donate, before a disaster, preidentified necessary items for disaster victims and (2) developing procedures for handling unnecessary donations made during a disaster.

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## California

California's interagency hazard mitigation team's report made about 60 recommendations in areas such as hazard identification and monitoring, and repair and construction. About 30 recommendations addressed response planning. One of these said that FEMA and the California Office of Emergency Services, along with other federal, state, and local agencies, should develop new plans or revise existing plans for (1) state and federal responses to major disasters; (2) state resource assistance; (3) a state medical plan and mutual aid agreements; (4) state and local water distribution systems; and (5) federal, state, and local communications equipment.

The team also addressed the need to preidentify and position federal, state, and local resources to immediately mobilize for a disaster area. Current federal law, however, precludes major federal suppliers, such as



DOD, from taking such actions, according to the report. Additionally, the team recommended that critical facilities, such as hospitals, have provisions for on-site, back-up generators and/or emergency fuel supplies and that state mass care and shelter providers receive training in procedures and resource coordination.

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## North Carolina

Division of Emergency Management officials plan to have all inland counties develop a specific section covering hurricanes in their emergency operating plans. Before the hurricane, only coastal counties were required to include these hurricane-specific sections, but the unexpected path of Hurricane Hugo made emergency management officials aware of the need for inland counties to develop them as well.

In addition, the North Carolina National Guard identified a need for training exercises throughout its chain of command, and recommended that the state legislature amend current statutes to allow the Guard to participate in emergency management training exercises.

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## Puerto Rico

Puerto Rico is revising its emergency operating plan to, among other things, reorganize and clarify the roles and responsibilities of the primary providers of food and shelter. In addition, the interagency hazard mitigation team made 22 recommendations on preparedness, warning, and response. Recommendations addressed revising or developing plans for immediate response activities. For example, the team recommended that Puerto Rico revise existing evacuation plans and develop a comprehensive shelter plan. For situations where state and local governments cannot respond to a catastrophic disaster, it recommended that FEMA and other supporting federal agencies develop a federal immediate response plan. To support this plan, the team recommended that Puerto Rico develop a priority list of critical services that may require federal support in future disasters.

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## South Carolina

The Governor's Emergency Management Review Panel, comprising representatives from FEMA; the Red Cross; the National Guard; and other state, local, and public offices, made 25 recommendations, including the creation of a federal rapid response team that would provide immediate aid to victims of disasters before the arrival of other federal entities and national voluntary relief agencies. It also recommended improvements to statewide radio communications and mandatory training for local emergency preparedness officials and staff, as well as elected county

and municipal officials. The panel recommended adding recovery issues to the state emergency preparedness plan and creating a post-evacuation plan for returning evacuees to their residences. Other recommendations addressed areas such as public information, back-up generators, interagency cooperation between nonprofit agencies, hazard mitigation, and emergency broadcasting.

In addition, the interagency hazard mitigation team made recommendations in emergency management, communications and warning, infrastructure, utilities, transportation, and other areas. It recommended that state and local governments, along with FEMA, (1) ensure that state and local emergency operating centers have adequate facilities; (2) develop a comprehensive plan for emergency communications between state and local emergency operating centers; and (3) implement provisions for back-up emergency power for critical facilities, such as hospitals, nursing homes, commercial radio stations, and water and sewer facilities.

The State Emergency Preparedness Division recognized that its difficulty in managing a major disaster such as Hurricane Hugo resulted from inadequate equipment, facilities, and staff at its emergency operations center. Further, it recognized that it needed to reorganize along functional lines for maximum efficiency. To address these problems, the Division recommended acquiring additional equipment and facilities; conducting additional training; revising plans; requiring a Division representative in the Governor's emergency operations center at all times during and immediately after disasters; and evaluating the Emergency Preparedness Division's structure.

The state National Guard made 11 recommendations, including cross-training of its staff on equipment operation and maintenance skills, decentralizing its command and control, and establishing a military/civilian liaison for each county immediately after a disaster. In addition, the Guard recommended improvements in National Guard communications capabilities, including having an effective chain of command for providing information, sources of back-up power, and coordination between the National Guard and public radio and television stations.

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## Virgin Islands

In its report on the Virgin Islands, the interagency hazard mitigation team made recommendations addressing preparedness issues such as planning and training. For example, it recommended that FEMA evaluate the catastrophic earthquake plan (which FEMA has replaced with the

draft November 1990 Federal Natural Disaster Response Plan to include disasters other than earthquakes) for situations where state and local governments are unable to assume the immediate response role in a large-scale disaster. The team also recommended that the territory revise its emergency operating plan to include identification of critical facilities. For training, the team recommended that the territory improve the quality of emergency management agency staff through training and that it educate elected officials on disasters. Additional recommendations suggested developing multihazard public information and preparedness programs; improving territorial communications, such as alternative sources of back-up power; and establishing an emergency power-generating system.

Currently, both the Virgin Islands National Guard and the territory's Emergency Management Agency are under the authority of the Adjutant General. The legislature, however, is considering placing the Emergency Management Agency under separate management to help improve its performance.

The Virgin Islands Territorial Emergency Management Agency is revising its emergency operating plan to improve coordination between local government agencies. In addition, these local agencies are adding a section to the plan to provide information on the specific roles and responsibilities of key individuals.

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Actions already taken and planned will improve the ability of FEMA as well as the state and local communities to manage the next disaster. However, in chapter 6 we are making a number of recommendations to FEMA which we believe will further strengthen both its ability to respond in the event of a disaster and its ability to assist state and local governments to prepare for a disaster. Further, we raise a number of issues for the Congress to consider concerning FEMA's legislative authority.

# Conclusions and Recommendations

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## Conclusions

Hurricane Hugo and the Loma Prieta earthquake were devastating, and the media's coverage of these events suggested that FEMA was not responding as expected. A closer look, however, shows that FEMA generally fulfilled its statutory obligations to supplement state and local efforts. Nonetheless, these nearly simultaneous disasters highlighted areas in three phases of disaster management—preparedness, immediate response, and recovery—that need attention by federal, state, and local agencies.

State and local governments have primary responsibility for disaster preparedness. FEMA only has the authority to guide, but not direct, state and local governments in their preparedness plans and activities. When states and/or local governments do not comply with agreed-upon objectives, correct problems uncovered in exercises, or participate in training, FEMA has no practical means of requiring that they do so to be better prepared to deal with disasters. However, the recent experiences with Hurricane Hugo and the Loma Prieta earthquake should be persuasive. When states and local governments had fully engaged in planning and exercises, and made appropriate corrections, they were better able to respond to the demands of these natural disasters. However, all levels of government faced problems in dealing with long-term recovery, on which FEMA has placed little emphasis.

In the immediate response to Hurricane Hugo and the Loma Prieta earthquake, the needs of disaster victims were generally met, but not necessarily as efficiently as possible. These inefficiencies, particularly coordination difficulties between agencies, requests for assistance that went outside of normal channels, and inadequate staffing, gave rise to a general impression that FEMA and other agencies were not meeting their obligations. In addition, some disaster victims and some government officials did not understand FEMA's responsibility to supplement the efforts of state and local governments.

FEMA has limited ability to ensure that all states have the capability to fulfill their first response roles effectively and efficiently. Different capabilities at state and local response levels became evident immediately after the disasters. Also, because FEMA was not prepared to take over the state's role as immediate responder, assistance was delayed. FEMA is now considering actions that could be taken to provide first response assistance when necessary.

In recovering from the September and October 1989 disasters, FEMA and other agencies did not manage their assistance programs as efficiently

as possible. For example, computer systems between FEMA and the other agencies administering individual assistance programs were incompatible. As a result, duplicate registrations occurred and were not always reconciled before duplicate payments were made. In addition, FEMA and other agencies with similar responsibilities for restoring public facilities did not coordinate their activities. For example, FEMA and Education provide assistance to repair schools. However, because of coordination problems, some school districts were subject to duplicate inspections; assistance was delayed for several months. Similarly, FEMA and SCS did not coordinate debris removal efforts in South Carolina, which created potential health and safety hazards for months after the disaster.

In the recovery phase, we found that current federal disaster assistance programs do not provide adequate assistance to state and local governments to reconstruct damaged rental units. The shortfall in housing assistance was evident in several areas. First, landlords desiring to repair damaged units found that federal disaster loans were not economically feasible for low-income housing. Repayment costs would require owners to charge rents beyond the means of low-income tenants. Second, HUD received no disaster assistance funds, and transfers of other HUD funds to aid disaster victims were delayed. Third, California's deferred loan programs offered some limited assistance to restoring rental units and homes, but assistance was delayed because federal assistance was to be used first. And finally, FEMA said its authority only permitted it to provide temporary emergency shelter. In California, FEMA did not establish a temporary housing assistance program that recognized the need for a longer term housing recovery plan. FEMA's housing assistance requirements and procedures made it virtually impossible for some disaster victims to get temporary housing assistance. Also, one approach FEMA instituted to deal with the needs of housing disaster victims in areas not part of the mainland United States did not conform to the explicit requirements of the Stafford Act.

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## Recommendations

To help ensure that local, state, and federal agencies are better prepared to respond to disasters, we recommend that the Director of FEMA

- request state and local emergency management agencies to incorporate recovery activities into their emergency plans and help provide appropriate training to state and local disaster management personnel;
- request that states establish monitoring systems to help ensure that local jurisdictions correct problems and weaknesses identified during emergency training exercises and drills;

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- periodically provide natural disaster training to FEMA headquarters and regional office staff who are not assigned to the disaster assistance program but who may be needed during large-scale natural disasters;
  - clarify, where appropriate, the roles and responsibilities of involved federal agencies by developing memoranda of understanding, or other suitable methods, to improve coordination with such agencies;
  - improve FEMA's computer system to help ensure that duplicate applications for assistance are immediately identified and that automated registration information is available to other agencies for their use in administering disaster assistance programs;
  - cooperate with the Department of Education in the repair or restoration of public schools so that duplicate damage inspections do not occur and schools receive necessary financial assistance more promptly; and
  - coordinate with the Secretary of HUD and other appropriate federal, state, local, and voluntary relief agencies to develop a suitable housing recovery plan for low-income victims.

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## **Recommendation to the Congress**

FEMA had problems in providing housing for low-income disaster victims in California and the Caribbean in part because it was unsure of its role in responding to disaster-related, long-term housing needs. Therefore, the Congress should either (1) clarify whether section 402 of the Stafford Act authorizes FEMA to direct HUD to assist state and local governments in rehabilitating or reconstructing housing for disaster victims or (2) amend sections of the United States Housing Act of 1937 and the Housing and Community Development Act of 1974 to provide for appropriations directly to HUD to fund housing assistance for disaster victims.

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## **Matters for Congressional Consideration**

The Congress should consider providing FEMA with the authority to act as a first response agency in situations where such assistance is warranted.

The Congress should also consider amending section 408 to authorize FEMA to institute approaches such as eligible-created resources that provide permanent, rather than temporary, housing to disaster victims. Such authority should be available only when special circumstances make it impracticable to provide temporary housing units.

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## Views of Federal and State Agencies

As requested, we did not request written comments on a draft of this report. However, we discussed the report's factual information with the officials of federal and state agencies. They generally agreed with the portrayal of the information presented in this report.

Specifically, aside from general discussion, California did not provide any comments, while North Carolina and Puerto Rico offered only minimal comments, which we have incorporated in this report. South Carolina officials agreed with the facts presented; however, they said that the role of the dual command centers to address the needs of victims should be clarified to recognize that this situation only created difficulties initially and it was corrected quickly. We have revised the report to recognize South Carolina's views. (See pp. 43 to 44.) The Virgin Islands took issue with the portrayal of its role as first responder. In light of its concern, we recognized its views. (See pp. 33 to 34 and 45 to 46.) FEMA generally agreed with the information presented. However, FEMA disagreed with our legal conclusion that the eligible-created resources approach to meeting housing needs does not conform to the requirements of the Stafford Act because FEMA-funded housing is made available on a permanent instead of temporary basis. FEMA has taken the position that the Stafford Act provides the flexibility necessary to allow the use of eligible-created resources for housing needs. We suggest that the Congress consider changing the law to specifically allow such flexibility in the future. (See p. 68.)

# Agencies That May Respond to Major Disasters

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American Red Cross  
Environmental Protection Agency  
Federal Communications Commission  
Federal Emergency Management Agency  
General Services Administration  
Interstate Commerce Commission  
National Aeronautics and Space Administration  
National Communications System  
Nuclear Regulatory Commission  
Office of Foreign Disaster Assistance  
Office of Personnel Management  
U.S. Army Corps of Engineers  
U.S. Department of Agriculture  
U.S. Department of Commerce  
U.S. Department of Defense  
U.S. Department of Education  
U.S. Department of Energy  
U.S. Department of Health and Human Services  
U.S. Department of Housing and Urban Development  
U.S. Department of the Interior  
U.S. Department of Justice  
U.S. Department of Labor  
U.S. Department of State  
U.S. Department of Transportation  
U.S. Department of the Treasury  
U.S. Department of Veterans Affairs  
U.S. Postal Service

Source: FEMA.



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# Major Contributors to This Report

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**Resources,  
Community, and  
Economic  
Development Division,  
Washington, D.C.**

Frank V. Subalusky, Assistant Director  
Charles B. Hessler, Evaluator-in-Charge  
Margaret C. Earman, Staff Evaluator  
Michelle A. Gambone, Senior Social Science Analyst  
Carol Herrnstadt Shulman, Reports Analyst

---

**Office of the General  
Counsel, Washington,  
D.C.**

Martin E. Sloane, Assistant General Counsel  
Christine F. Bednarz, Attorney-Advisor

---

**Atlanta Regional  
Office**

Jesse J. Flowers, Regional Assignment Manager  
Signora J. May, Site Senior  
Maria B. Bauer, Staff Evaluator

---

**New York Regional  
Office**

Thomas A. Repasch, Jr., Regional Assignment Manager  
Joseph L. Santiago, Site Senior  
Sarita Valentin, Site Senior

---

**San Francisco  
Regional Office**

Larry J. Calhoun, Regional Assignment Manager  
Mary K. Colgrove-Stone, Site Senior  
Donald J. Porteous, Site Senior



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