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REGION I

INTRODUCTION

FEMA Region I encompasses the scenic geography and diverse populations of the six New England states: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont. From the elegant mansions in Newport, R.I., to the potato fields of Aroostook County, Maine; from the shores of Cape Cod to the majestic Presidential mountain range - the area is 600 miles from north to south and 400 miles at its widest point east to west.

The unique blend of scenic beauty and rich cultural tradition is further enhanced by the full kaleidoscope of seasons... summers drenched in sunshine, glorious autumn leaves that attract thousands of tourists, sparkling winter snowscapes, and a springtime bedecked with violets and apple blossoms.

New England is also vulnerable to natural disasters - winter storms, ice jams and blizzards, floods, hurricanes, tropical storms, tornadoes and earthquakes.

The six states comprise a population of about 13.5 million, represented by 12 senators and 23 congressmen/congresswomen. The FEMA Region I fulltime staff includes 70 in Boston, and about 25 more at the Federal Regional Center (FRC) and Mobile Emergency Response Support (MERS) in Maynard, Mass. In addition, the region has a cadre of approximately 400 intermittent disaster assistance employees (reservists) who can be deployed to a disaster at a moment's notice.

DISASTERS AND EMERGENCY ACTIVITIES –

#1: The Storm of the Century – March 1993

Emergency Measures Declarations:

EM-3098-CT

EM-3102-RI

EM-3099-ME

EM-3103-MA

EM-3101-NH

Overview/Background

On March 12, 1993, the National Weather Service warned of a “paralyzing and life-threatening blizzard” expected to hit New England the following day. On March 13, the storm system exploded into a major winter storm affecting the entire East Coast. The blizzard brought hurricane-force winds and 1 to 3 feet of snowfall, knocked down power lines and caused serious coastal flooding in the region. Many roads were impassable, hundreds of cars had to be towed and accidents proliferated all over the region in the near white-out conditions.

President Clinton declared a snow emergency for Maine on March 15. The following day, Connecticut, Massachusetts, New Hampshire and Rhode Island were also declared for snow emergency assistance. The states were to be reimbursed for a percentage of eligible snow removal costs for a five-day period from March 13 through 17.

The money obligated, as of March 31, 2000, for the Blizzard of 1993 in New England is \$3,471,881.

Lessons Learned

Formula for Snow Removal Costs - Region I initiated an innovative, formula-based approach to determining the amount of eligible cost, which the Region had developed in response to snow emergency work in 1992. Eligible applicants received an instruction package, specialized briefings, and a simplified worksheet that the applicant prepared and mailed to designated locations.

Public Assistance- Inspectors were assigned to each state to receive and review the prepared worksheets and supporting documentation, and to prepare damage survey reports

Centralized Processing – A fully operational FEMA processing center in Waltham, Mass., had been established to accommodate closeouts of earlier disasters. The processing center was easily expanded to include snow emergency staffing. FEMA liaisons were deployed to Connecticut, Maine, New Hampshire and Rhode Island to assist with Public Assistance applicant briefings. Completed public assistance packages were mailed to Waltham for centralized data processing. This strategy allowed one or two FEMA inspectors to oversee the procedure at the state level, then forward the packages of information to Waltham.

Outreach to Native American Tribes – Aggressive outreach was conducted with all federally-recognized tribes to inform them of available assistance and to determine their needs in regard to snow removal. The Narragansett’s chose to sign a FEMA/Tribal agreement. The Malisetts received assistance from the Bureau of Indian Affairs; the Passamoquoddy at Pleasant Point

Reservation chose to be treated as sub grantees of the state of Maine. The other tribal nations did not require assistance.

#2: The Blizzard of 1996

Disaster Declarations:

DR-1092-CT

DR-1090-MA

DR-1091-RI

Overview/Background:

On Jan. 7, 1996, the National Weather Service issued a blizzard warning and coastal flood warning for coastal Connecticut and a winter storm warning for the remainder of the state. Final snow accumulation for this storm ranged from 14 to 27 inches and wind chills dipped to 20 degrees below zero. The National Guard was called to assist with the response effort. To the north, Massachusetts had myriad problems related to blowing and drifting snow that eventually absorbed more than \$20 million in federal funding. Over 4,000 pieces of equipment were involved in the effort to keep roads passable. One shelter was opened in a coastal community and a housing complex for the elderly was evacuated due to the threat of severe flooding. Logan International Airport in Boston was closed. An average of 18 inches of snow fell – added to a foot of snow already on the ground. School and road closings lasted up to a week.

Major disasters were declared for all three states. Several of New England's federally-recognized Native American tribes also received assistance. FEMA headquarters formulated a set of snow emergency guidelines to provide consistent assistance throughout the 1996 blizzard area.

As of March 31, 2000, the following funding was obligated:

Connecticut -	\$ 7,971,317
Massachusetts -	\$22,607,534
<u>Rhode Island -</u>	<u>\$ 2,625,421</u>
TOTAL	\$33,204,272

Lessons Learned

Region I adopted the snow removal policy issued by FEMA headquarters.

#3: Tri-State Flooding in October 1996

Emergency Measures and Disaster Declarations:

EM-3121-ME DR-1143-ME

DR-1144-NH

EM-3119-MA DR-1142-MA

Overview/Background

The event, which began on Oct. 20, involved excessive rain and strong winds from a nearly stalled pressure front. Over 18.5 inches of rain fell on coastal York County, Maine, and torrential rain caused extensive flooding across areas of eastern Massachusetts, northern, central and southeast New Hampshire and southwest Maine.

In Massachusetts, one of the four arteries of the metropolitan subway system was hampered by water levels of 20 feet inside the tunnels. Shelters were opened and used by 450 persons at the

peak of the event. Damage assessments counted more than 800 homes and 122 businesses with major damage; more than 8,000 homes and businesses sustained minor damage.

Partial failure of a dam in Westbrook, Maine, resulted in the temporary evacuation of 85 of the 200 downstream residents and the paper mill spilled 750 gallons of hazardous materials. The Saco sewage treatment facility was damaged. More than 2,500 homes were impacted by the storm in Maine. National Guard troops provided water to hospitals, jails, veterans' homes and other facilities.

In New Hampshire, the Exeter town water supply treatment plant was affected and the National Guard was called in to supply potable water. Fifteen shelters were opened at the height of the storm. More than 1,000 evacuations occurred statewide. Two dams failed, one experienced partial failure, four had extensive damage and six others required monitoring. In Rockingham, the county complex was badly damaged, necessitating relocation of the jail inmates housed at that site.

Emergency declarations were initially made for Massachusetts and Maine and later upgraded to major disaster declarations.

As of March 31, 2000, the funds obligated for the three disasters were: Maine, \$11.8 million; Massachusetts, \$67.8 million; and New Hampshire, \$5 million, for a tri-state total of \$84.6 million.

Major Challenges

Non-profit Agencies - There was concern that some eligible private, non-profit agencies might not apply for assistance under the Infrastructure program.

Major Infrastructure Damage - One of the costliest damage sites in Massachusetts involved a key station (Kenmore Square) on the subway system's Green Line and public interest was high.

Lessons Learned

Outreach to Private Nonprofit Agencies – Community Relations staff were deployed to myriad private non-profit organizations to deliver information regarding the Infrastructure program and eligibility criteria. As a result, a record number of nonprofit agencies were able to apply for assistance.

Special Liaison for Complex Public Assistance Applicant –Due to the high visibility of the subway flooding, a specialist with appropriate technical expertise was assigned to serve as a single-focus FEMA liaison/inspector for work with the Massachusetts Bay Transit Authority.

Mitigation Package for Municipal Officials –Pertinent information was assembled and mailed to Massachusetts municipalities, along with an interagency Hazard Mitigation Team final report. The packets included "Safeguarding Your Historic Site," "Protecting Your Home from Flood Damage," and information sheets on disaster planning and mitigation for public and cultural institutions.

Minimization Program – Many property owners were allocated funds to mitigate against future damages. These "Minimization" measures included elevating utilities or appliances, installing backflow valves to prevent sewage backup, and other cost-effective measures.

#4: 1998 Northeast Ice Storm

Disaster Declarations:

DR-1198-ME

DR-1201-VT

DR-1199-NH

Overview/Background

While ice storms are not uncommon in the Northeast, the system that battered the four-state region in early January 1998 was unprecedented. Below-freezing temperatures combined with record rainfall to cover an area from western New York to Maine with solid ice.

Massive tree limbs shattered under the weight of ice, choking roads and recreational trails with wood debris. Power lines snapped, leaving communities without electrical power in bone-chilling temperatures. Widespread and sometimes lengthy outages interrupted business.

Approximately 1.5 million people were without electricity – some for more than three weeks. Seventeen deaths were attributed to the storms.

State and local governments and voluntary organizations were first responders to the emergency needs. There was a need for generators in critical facilities and many residents turned to alternate means to heat their homes for the duration of the power loss. Volunteer groups provided warm shelters and meals, search and rescue missions were conducted, and generators were distributed. Utility crews and the National Guard worked to restore power to the region. More than 17 million acres of urban and rural forests in the four-state area were damaged, creating an immediate safety hazard and threatening the long-term regional economy.

Dairy farmers in the region suffered significant loss of livestock, decreased milk production and damaged farm equipment. Recreation and tourism losses were attributed to the closure of hundreds of miles of ski runs and recreational trails.

The governors of the four affected states requested and received presidential disaster declarations, making a wide range of disaster assistance programs available. A FEMA tribal liaison conducted outreach to Native American tribes in Maine, which resulted in assistance to the tribes as subgrantees of the state.

President Clinton activated a multi-agency Long-term Recovery Task Force, chaired by Director Witt, to address the impacts of the widespread devastation. The task force met and produced “A Blueprint for Action, The President’s Action Plan for Recovery from the January 1998 Ice Storm.”

A six-month follow-up meeting was conducted in New Hampshire. “A Call for Collaboration: Final Report on the January 1998 Ice Storm” was published as a result of that meeting.

Interagency Hazard Mitigation Team meetings were held in all three states. The interagency team, composed of federal, regional, state and local officials, meets after a disaster to identify appropriate mitigation actions and make recommendations as to how to implement those actions. Funding obligations through March 31, 2000: Maine- \$48.7 million; New Hampshire - \$12 million; Vermont - \$6.3 million, for a total of \$67 million for the three New England states.

Major Challenges

Multiple Agencies Needed for Recovery – The widespread damage could not be addressed through any single agency’s programs. The most successful recovery strategy would involve a multiple-agency approach.

Information Needs – There appeared to be a lack of information available to hand out to ice storm victims regarding portable generators, tree mitigation, and ice storm cleanup.

USDA Ombudsman Needed – Because of the wide range of assistance available from the U.S. Department of Agriculture, the president directed the agency to immediately begin working toward developing a single, knowledgeable point of contact to serve as ombudsman at the state level and to participate in federal/state disaster recovery centers.

Lessons Learned

Collaboration between Agencies – The task force concept provided a coordination point between multiple agencies addressing their own portion of a very large problem. Shared materials allowed agencies to choose and adapt information to suit the needs of their own specific customers.

Mitigation Brochures – Mitigation staff helped prepare a kit of information flyers on various subjects pertinent to preparedness and mitigation for ice and winter storms. These included: “Prepare for a Storm,” “Disasters: Be Prepared, Stay Healthy,” “Health and Safety Tips,” “Portable Generator Safety,” “Disasters: Relief and Cleanup,” and “Pruning Trees.”

Congressional Assistance – In the aftermath of the disaster, officials from the region, along with the administration and affected congressional members, petitioned Congress for money to address not-funded or under funded programs. Emergency appropriations were approved for a variety of programs. A variety of USDA Forest Service programs were funded to assist in the recovery effort: Forest Stewardship, Stewardship Incentive Program, Urban and Community Forestry Program, Rural Development Program and Forest Health Management Program.

Toll-free Ice Storm Information Numbers – The states of Maine and New Hampshire established toll-free ice storm recovery telephone numbers to keep residents updated with pertinent information.

Donated Goods and Services – The state of Vermont initiated a phone bank to coordinate donated goods and services.

REGIONAL INNOVATIONS

Damage Prevention

Mitigation, or damage prevention, helps protect people and property from the ravages of nature – breaking the costly damage-repair cycle.

Minimizing Future Loss By Low-Cost Measures

Initiated after Hurricane Bob

The Minimization Program was designed as part of Region I’s hazard mitigation efforts. After Hurricane Bob in August 1991, steps were taken to integrate hazard mitigation efforts into the Individual Assistance Program. The pilot program provided eligible Individual and Family

Grant recipients with additional funding to implement minimization measures that would reduce or eliminate flood damage to their homes from future storms.

Program Objectives

The minimization program pilot was undertaken to demonstrate that lives and property can be protected, and costs of individual assistance programs, flood insurance claims, Small Business Administration loans and IRS programs can be reduced.

A hazard mitigation seminar, held in New London, Conn., provided a forum for the cross-training of combined verification inspectors and hazard mitigation staff. The purpose of the seminar was twofold: 1) to train inspectors to identify minimization opportunities, and 2) to train mitigation staff to provide minimization counseling to disaster victims.

The training was utilized a few months later in the wake of a devastating October 1991 northeaster ("The Perfect Storm").

Minimization Proposal Submitted to FEMA Headquarters

In December 1991, FEMA Region I submitted a Minimization Program proposal to FEMA Headquarters in Washington. The proposal outlined how the program would be implemented and the cost-effective criteria that would be used to determine applicant eligibility.

A briefing was conducted with the governor's authorized representative and the state Individual and Family Grant (IFG) coordinator in Massachusetts to explain the pilot program. The Minimization Program, jointly funded and administered by the commonwealth of Massachusetts, was a cooperative effort between the commonwealth and FEMA. It was administered through the IFG Program and treated as a supplemental grant.

Information on minimization measures was provided to homeowners at disaster application centers and mailed to applicants requesting information through a disaster information hotline.

Appropriate Measures Identified

- The agency contracted by Region I to perform habitability inspections on damaged homes identified viable minimization opportunities for later referral to FEMA Minimization staff.

In the 86 completed minimization cases, the most common measures employed were elevation and relocation of the heating plant, and relocation of the water heater. More than a dozen clients chose to relocate the main electrical panel, relocate the washer/dryer, or construct exterior masonry walls to protect against incoming water.

Minimization Tested by Next Storm

The Minimization Program was tested less than a year later when a major coastal storm swept eastward from New Jersey to Massachusetts in December 1992. Massachusetts requested a Public Assistance disaster declaration to reimburse state and local governments for storm-related expenses.

Of the 1991 Minimization Program participants, 49 had homes exposed to floodwaters again in the 1992 storm. Three of the homes were affected by floodwater but only one case was related to actual minimization measures. The minor seepage that resulted did not damage the home's

utilities. Most of the surveyed clients said they would have been affected by the new storm had minimization measures not been undertaken after the 1991 event.

A Dec. 21 Boston Globe newspaper article highlighted the minimization program's success. The story featured two families that had moved their utilities out of frequently flooded basements, using Minimization Program funding. Neither family needed to be evacuated during the December 1992 storm because their heat and electricity stayed on.

Meanwhile, in neighboring Connecticut, a disaster declaration was issued for both Public Assistance and Individual Assistance.

Spreading the Word

Shortly thereafter, Minimization staff was deployed to New York to implement the program after a flood disaster. While there were less than 100 minimization clients in the 1991 Massachusetts pilot program, nearly 800 New Yorkers were assisted after the declaration in that state. In the summer of 1993, Region I minimization experts were deployed to Iowa and Missouri during the Midwest floods to train others in the procedures and eliminate backlogs in the Minimization program delivery system. Later in West Virginia, Region I minimization personnel were again dispatched to run the program in conjunction with Region III.

In 1994, Minimization funding was moved to the Minimal Repair disaster housing program as inspections became automated via hand-held computer units.

OTHER MITIGATION MILESTONES & INNOVATIONS

New Elevation Certificate

In 1999 FEMA introduced a new elevation certificate, a document verifying a structure's position relative to the Base Flood Elevation (BFE). The elevation certificate has multiple applications within the National Flood Insurance Program. The certificate helps determine flood insurance rates, used in support of flood plain map amendments and revisions, and helps document community compliance with National Flood Insurance regulations.

In Region I, the state of New Hampshire requested more detailed information regarding the new certificate. Four seminars have been scheduled sponsored by the New Hampshire Office of Emergency Management and the Office of State Planning.

North East States Emergency Consortium (NESEC)

In the early 1990s the New England States Earthquake Consortium was formed, evolving into the New England States Emergency Consortium in the mid 1990s and recently including New York and New Jersey as North East States Emergency Consortium (NESEC).

Boston Earthquake Study

An earthquake loss study conducted on Boston may have been a first for the East Coast. Since then, a methodology to estimate earthquake losses has been developed for FEMA by the National Institute of Building Sciences. Based on HAZUS (Hazards U.S. software), the first trials for risk evaluation for Boston were completed in 1998. HAZUS is being expanded into a multi-hazard methodology with new models for estimating potential losses from wind (hurricanes, thunderstorms, tornadoes, and hail) and flood hazards.

Rhode Island Honored

Following Hurricane Bob in 1991, Rhode Island was one of the first states in the country to develop a comprehensive state and local mitigation planning program to address flood hazards. Rhode Island has built on a long list of "firsts", including the first state to accomplish 100 percent local participation in the National Flood Insurance Program. As a result of their many efforts, Rhode Island received the State Award at the 1999 Project Impact Summit and was named a Showcase State by the Institute for Business and Home Safety.

Reinvention

Partnerships

Region I has established good working relationships with emergency management agencies in the six New England states, with local counterparts during disaster recovery, and with members of Congress and their staff.

PROJECT IMPACT MENTORING RETREAT: EXPANDING THE MITIGATION CIRCLE

Project Impact, as initiated by Director Witt in 1997, has provided a successful vehicle for strengthening partnerships in the New England states. The practicality and long-term savings of promoting disaster-resistant communities supports the natural instincts of the thrifty Yankee character. In many cases, communities selected to receive funding were already engaged in taking steps to reduce repetitive damages within their boundaries.

Regional Partners Request New England Meeting

The first *Project Impact* Summit was held in Washington, D.C., in December 1998. During the summit, Region I Director convened a meeting of participants from the New England states. At that meeting, the communities asked Region I to hold a mini-summit in the region to accommodate more of the New England *Project Impact* partners.

The *Project Impact* communities had already received funds intended to provide one-on-one mentoring with other *Project Impact* communities. In order to be responsive to the needs of the New England states, FEMA Region I supported the use of the allocated funding for a group event.

The retreat was designed as a series of facilitated working sessions focused on specific community issues. The only exception was a training session on FEMA grant management requirements, which was a priority for all the communities.

Tie-in with Annual Meeting

Region I states were traditionally involved in an annual State Hazard Mitigation Officer and National Flood Insurance Program (NFIP) Coordinator meeting. The productive connections between *Project Impact* communities and the state mitigation and NFIP population provided an incentive to try to orchestrate a common meeting. A *Project Impact* retreat could fold into a state mitigation/flood insurance meeting very appropriately and give all the mitigation partners a better understanding of the big picture.

Hosted by Vermont *Project Impact* Community

Lamoille County hosted the joint mitigation/flood insurance/*Project Impact* meeting in conjunction with the state of Vermont, held in Stowe, Vt., from May 17-21, 1999.

About 80 persons attended the five-day meeting, including representatives from the 12 New England *Project Impact* communities. *Project Impact* was the focus of the first half of the week and recommendations from *Project Impact* communities were presented during the state mitigation/flood insurance meeting that took place the latter half of the week.

Revise NEPA review process

The National Environmental Protection Act (NEPA) requires review of all federal grant projects. After a disaster, FEMA staff, under the Disaster Relief fund, does the documentation for NEPA. However, *Project Impact* funds are not disaster-derived, which prevents these same staff from doing *Project Impact* documentation, leading to substantial delays in compiling the information needed.

Conclusions and Update

As designed, the 1998 mentoring retreat provided a forum for direct community-to-community *Project Impact* dialogue. It was loosely structured and driven by the *Project Impact* communities' concerns and experiences.

Region I repeated the back-to-back *Project Impact* mentoring retreat and state mitigation/flood insurance meeting in May 2000, in Falmouth, Mass. The "Financial Guide for *Project Impact*" was updated and presented to the most recent *Project Impact* communities. Approximately 100 persons attended representatives from New England emergency management agencies, other federal agencies (Small Business Administration, Environmental Protection Agency, and Department of Energy), and *Project Impact* communities.

TRIBAL PARTNERSHIPS

New England is the home of several federally recognized Native American nations. Region I maintains a relationship with tribal leaders and has collaborated with them in the following ways:

The draft tribal policy was distributed to federally recognized Native American nations.

Headquarters, Region I, and tribal representatives participated in a discussion session hosted by the Mashantucket Pequots, with all comments formally recorded for FEMA headquarters.

The region has a tribal policy working group with representation from all divisions to ensure broad implementation of the policy throughout the divisional structure. For example, the Mitigation Division arranged for letters to be sent to all tribal leaders regarding the National Flood Insurance Program (NFIP), since tribes have not participated in NFIP thus far.

Four tribes participated in the regional Hurricane Preparedness seminar held at the Federal Regional Center in the summer of 1999. The meeting was conducted by the Response and Recovery Division and included presentations by National Weather Service and U.S. Army Corps of Engineers. Emergency Support Functions states, tribes and Region I staff described preparedness and response status.

Tribal representatives are invited to Regional Interagency Steering Committee (RISC) meetings. The June 2000 meeting was hosted by the Mashantucket Pequots.

The Radiological Emergency Preparedness (REP) Program

A strong, ongoing partnership is maintained between FEMA and the six New England states by means of the Radiological Emergency Preparedness (REP) Program. FEMA was given the

primary federal role in offsite radiological emergency planning and preparedness activities in 1979, following the Three Mile Island nuclear power plant accident in Pennsylvania.

Milestone 2/3 – Waterford, CT

Pilgrim – Plymouth, MA

Seabrook – Seabrook, NH

Vermont Yankee – Vernon, VT

OTHER REGION I PARTNERSHIPS

U.S. Army Corps of Engineers (USACE)

Region I and the Corps have joined forces on many occasions. One particular USACE facility, the Cold Regions Research & Engineering Laboratory in Hanover, N.H., is the only Department of Defense lab that addresses problems and opportunities unique to the world's cold regions – a description that fits New England winters. The cold regions research lab continues to conduct research into ice jam prediction methods and ice control, which greatly benefits communities along rivers in northern Maine, Vermont and New Hampshire.

The cold regions research lab also helped design a \$10 million bridge in Allagash, Maine, after it was wiped out by a 1991 ice jam that necessitated a road commute in excess of 100 miles from the north side of the river-divided town to the south side.

Cooperating Technical Communities Initiative

In 1999, Region I entered into its first agreement with the University of New Hampshire under the Cooperating Technical Communities Initiative. The initiative is part of one of the key objectives of the map modernization plan designed to increase local involvement in (and ownership of) the flood mapping process. As technologies have increased, many states, regional agencies and local communities have become increasingly sophisticated and have invested significant resources in flood hazard identification. As a result, some communities and local government organizations now have the capability of performing technical aspects of the mapping process.

Customer Service

Folding All-Hazards Approach into NFIP Visit

In October 1998, after the launch of *Project Impact*, Region I elected to introduce an all-hazards approach to the community assistance visits. The Region I Mitigation Division director sent a letter to New England state emergency management directors, state National Flood Insurance Program (NFIP) coordinators and state hazard mitigation officers, outlining the significant benefits of eliminating the duplication of effort created by presenting several programs separately.

States were encouraged to expand the existing community assistance visits to include additional local officials in discussions of all-hazard planning. These new invitees might be elected officials, conservation commission members, town managers, concerned citizens, town planner, code enforcement officer, emergency management officer and public safety officials. The new venue was called the All Hazards Community Assistance Visit (AHC AV). This concept was designed and implemented by the Region I staff and national flood insurance coordinators in each of the New England states.

First All-hazards Community Assistance Visit Conducted in 1999

The All-hazards Community Assistance Visit (AHC AV) is designed to incorporate a comprehensive review of a community's comprehensive hazard management. The first AHC AV was held in Keene, N.H., in late February 1999. Among the 45 participants were the town code enforcement superintendent, director of public works, assistant city manager and health director, and the division and deputy division directors of FEMA Region I Mitigation.

The meeting was conducted by FEMA and the New Hampshire National Flood Insurance Program coordinator. The group reviewed the city's floodplain management regulations and went through the AHC AV checklist: developing an all-hazard mitigation plan and emergency plans for the four dams located in Keene, Emergency Management Institute courses, HAZUS and earthquakes, NFIP Community Rating System, *Project Impact*, and pertinent area workshops.

Six additional all-hazards community assistance visits were held in 1999 in Hooksett, N.H., and Barre, Brattleboro, Ludlow, Montgomery and St. Johnsbury, Vt.

Targeted communities are larger cities and cities/towns with existing mitigation issues. Also taken into consideration: the date of the last community assistance visit, the community profile, the length of time the community has been in the flood insurance program and the number of NFIP policies.

Early Buyouts Documented

In the early 1990s, acquisition/buyout programs were relatively rare. However, a successful 1991 relocation and mitigation program followed an ice jam flood (DR-901-ME) in Allagash, Maine, and a second, more ambitious buyout project of 41 structures was launched in Fort Fairfield in 1994 after a similar ice jam event (DR-1029-ME).

In both cases, the projects were undertaken in small towns with limited resources. During the 1994 disaster, in the same rural county as the previous buyout, it was suggested that a "blueprint" would be helpful in trying to accomplish an acquisition project.

Three years after the Fort Fairfield project was begun, the riverbank was finally cleared of about 40 repetitive-damage structures. Another booklet, "Fort Fairfield: Out of the Floodplain," documented the steps taken to achieve that effort. As they were completed, the two booklets were circulated to Region I state emergency management agencies and to other FEMA regions. The benefit of the two narratives is that they provide practical information on how two different buyouts were conducted. They also are meant to build the confidence of other localities that may be contemplating acquisition projects. Documenting past projects gives our customers a springboard into future projects of their own.

Compendium of Multiple Agency Programs

In addition to in-region activities, Region I assumed responsibility of the Iowa recovery for several months after the Midwest floods of 1993. Because many homes in the Midwest were candidates for acquisition/buyout/relocation projects, a workshop was organized for January 1994. The workshop was a collaboration between Region I, Region VII, the state of Iowa, the Association of State Flood Plain Managers, and the Rivers, Trails and Conservation branch of the National Park Service. One of the handouts at the meeting was a manual *Iowa Acquisition & Buyout Options Workbook* (based on an Office of Management and Budget model) containing multi-agency program information and local points of contact tailored for participants in Iowa buyout/acquisition projects. The resource guide received an award at the Association of State

Flood Plain Managers conference later in 1994. The model has been re-used in other states, notably Maine (Maine Resource Directory 1994), Tennessee (Resource Guide for Accomplishing Mitigation, 1997), and Vermont (Resource Guide for Accomplishing Mitigation, 1998).

Handbook for Road Design and Maintenance - In 1995, FEMA and Vermont Agency of Transportation funded a Road Design and Maintenance Specifications Handbook for use by municipalities in Vermont. Vermont Local Roads assisted with the project and followed up by conducting workshops for Vermont towns to explain the cost savings and advantages of good hazard mitigation for preventing recurring flood damages.

Video - In 1994, the Mitigation Division was involved in a joint project with the New England States Emergency Consortium to produce a seven-minute videotape "Mitigation Makes Sense". Videotape crews have filmed VIP occasions and *Project Impact* ceremonies for the past several years.

Y2K

The public and private sectors were concerned about possible disruptions as world computers clicked from Dec. 31, 1999 to Jan. 1, 2000. FEMA Region I took the following steps to provide information and reassurance to its New England partners:

FEMA Director James Lee Witt conducted a Y2K roundtable discussion with the Massachusetts Municipal Association in Boston in January 1999. A regional Y2K conference was held in Boston in February 1999. Y2K brochures had numerous distribution points, including the lobby of the Boston federal building where the FEMA regional office is located.

The Boston Federal Executive Board was briefed on Y2K potential problems and the Board also helped with distribution of Y2K flyers.

Media was invited to a briefing and tour of the Federal Regional Center/Regional Operations Center, Maynard, Mass., in late December.

Regional operations center activated in final days of December 1999 and first days of January 2000.

Rapid Response

Buyout Project in Vermont

On the night of June 27, 1998, the flood-swollen New Haven River jumped its banks, tore a new streambed through Bristol's Palmer Court Trailer Park and devastated the homes and lives of residents in the park. Flooding was widespread in Vermont and a major disaster (DR-1228-VT) was declared on June 30. Within six days, federal and state partners developed a "fast track implementation strategy" for the recovery effort.

The Interagency Hazard Mitigation Team met on July 10 and endorsed the coordinated and aggressive strategy. Meetings were held with flood victims and town officials in Bristol in July and the State Hazard Mitigation Officer and FEMA Hazard Mitigation Officer guided them through the preparation of a Hazard Mitigation Grant Program (HMGP) application.

In August, the state hazard mitigation committee approved the grant application. The environmental review and cost/benefit analysis were completed and on Aug. 31, Bristol conducted a town meeting to provide town officials with legal authority to accept the acquisition funds and purchase the affected properties for open space. Voters unanimously approved the project.

FEMA mitigation funds were obligated for the Bristol acquisition project the next day, September 1. A check signing and presentation were staged by the FEMA Region I director and the governor of Vermont on Sept. 28.

Utility Crews Airlifted to Frozen Maine

During the '98 Ice Storm, a Region I mission assignment allowed utility crews and equipment to be airlifted to sub-freezing Maine to help restore power to massive areas of the state.

Creation of State Liaisons

Even before 1993, if a state seemed vulnerable to an impending disaster or if disaster struck without warning, Region I deployed at least one FEMA representative to that state's emergency operations center. That person was sent to interface with the state emergency management agency and to serve as a conduit between the state and FEMA Region I during the initial stages of the state's assessment of the situation. This close-at-hand FEMA "expert" could facilitate the process, should the state decide to request a joint damage assessment and/or a disaster declaration.

REGION II

INTRODUCTION

FEMA Region II encompasses the States of New Jersey and New York, along with the Commonwealth of Puerto Rico and the Territory of the U.S. Virgin Islands. Region II ranks fourth among the FEMA regions in total population, with more than 30 million people, and is the most densely populated of the FEMA regions.

The combination of old northeastern industrial cities, small towns, farmland, beach resorts, forested reserves and tropical Caribbean islands equates to a tremendous diversity in geography, climate, cultures, ethnicity and language, as well as in economic, social and political infrastructures.

Mainland states in Region II are vulnerable to such natural hazards as flooding, Nor'Easters, blizzards, snow emergencies, wildfires, serious coastal erosion, tornadoes and hurricanes, with earthquakes a potential hazard as well. The Caribbean faces recurrent hurricanes, flooding, flash floods, and deadly mudslides, in addition to being located within a major earthquake risk zone. Technological, hazardous materials and other manmade emergencies pose significant risks for Region II, particularly in areas with highly concentrated populations.

In carrying out FEMA's mission, Region II supports its states through their emergency management offices:

- The New Jersey Office of Emergency Management (NJOEM)

- The New York State Emergency Management Office (NYSEMO)

- The Puerto Rico State Emergency Agency (PRSEMA)

- The Virgin Islands Territorial Emergency Management Agency (VITEMA)

The differences in environments and risk factors among the jurisdictions served by Region II create special challenges both in preparing for and responding to the emergencies and disasters that all too often strike its states. FEMA Region II, with a regional office in New York City and a Caribbean Area Division located in San Juan, Puerto Rico, carries out the agency mission with considerable success, a strong commitment and a great deal of pride in its achievements over the years. With a staff of employees consisting of approximately 78 in the New York office and 15 in the Caribbean Division, its workforce can be augmented by as many as 400 Region II disaster assistance employees deployed as needed in times of crisis.

KEY DISASTERS AND EMERGENCY ACTIVITIES 1993-2000

Between the years 1993 and 2000, FEMA Region II responded to more than 35 events, including 22 federal disasters, 11 emergency declarations and two fire suppression assistance grants. By virtue of their magnitude or other circumstances, ten stand out as key events in Region II. It is noteworthy that four of the five most costly disasters in FEMA's history – namely hurricanes Marilyn, Hortense, Floyd and Georges – occurred in Region II. However, total response activity in Region II has included far more incidents and crises than the declared disasters. In monitoring developing events, Region II has activated its regional operations center and deployed personnel, including Emergency Response Teams–Advance (ERT-A), on many other occasions in anticipation of an emergency or major disaster.

Changing weather patterns resulting in numerous tropical storms and hurricanes that threatened the Caribbean islands and East Coast mainland states from 1993 to 2000 heightened activity in Region II.

DR-984-NY

World Trade Center Explosion

Declared 4/2/93

Overview/Background

The event that cost six lives and a nation's sense of invulnerability to terrorism took place around lunchtime on a typical spring weekday in New York City (NYC). Thousands of people were in the World Trade Center — working at their desks, heading to lunch, or visiting as tourists. Located on 16 acres only minutes away from Wall Street, the center consists of seven buildings and an enormous underground shopping concourse. The two largest buildings, called the twin towers, soar 110 floors above ground, with six sublevels and a 2000-car capacity underground garage. The World Trade Center provides office and retail space to approximately 400 tenants who employ 50,000 workers. With an average of 80,000 visitors daily, the complex is larger than many cities in population and activity.

Summary of Incident:

On Friday, February 26, 1993, at 12:18 p.m., a truck bomb detonated on a ramp near an underground parking garage beneath the Vista Hotel at the World Trade Center complex between the north and south towers. The blast rocked the complex, killing six people and injuring more than 1,000 — including 105 firefighters.

Damage to the center's life support, fire and protection systems was extensive, but fortunately its structural system proved to be sound. The explosion on the sublevel left a crater 150 feet in diameter, extending downward through three levels of reinforced concrete. Due to the blast, the center's power plant failed, resulting in loss of lights and elevator service. Five of the eight Con Edison backup generators were knocked out while the others shut down when 1.8 million gallons of water from broken waterlines and fire fighting equipment flooded the sub-basement.

Hundreds of cars also sustained damage.

As fires erupted around the scene of the explosion, the emergency alarms and public address systems were immediately disabled, disrupting the implementation of evacuation plans. Persons trapped in the towers and the 820-room Vista Hotel sought instructions on how to proceed safely out of their confinement by listening to radio stations and the sole TV station able to telecast

after the blast (most other NYC stations locate their transmitters on top of the first tower). Other people called for assistance, inundating the city's 911 system.

Within the first three minutes, smoke rose up to the 33rd floor, trapping thousands of people on upper floors, stairwells, and elevators for as long as seven hours. More than 55,000 people were forced to evacuate under hazardous conditions, climbing down staircases with little or no light. Seventy visiting elementary school children were trapped in elevators for approximately five hours. Almost twelve hours after the explosion the last people stranded in an elevator were removed. Considering the circumstances of darkness, smoke, limited communications and little knowledge of emergency/evacuation plans by the persons affected, the evacuation of the World Trade Center was accomplished with minimal adverse effects. As night fell, the only lights to be seen in these normally well-lit towers were the beams from the rescuers' flashlights. The incident was declared under control at 2:25 a.m. on Saturday, February 27, 1993.

Response and Recovery

Because the World Trade Center is owned by the Port Authority of New York and New Jersey, the emergency response operation involved emergency responders and resources from both states. The Port Authority Police, NYC Fire Department, NYC Police Department, Emergency Medical Services and a strong contingent of emergency medical units from New Jersey responded. The fire department transmitted 16 alarms, bringing 700 firefighters to the scene. A floor-by-floor search was conducted throughout World Trade Center. Altogether, approximately 1800 NYC emergency personnel and 400 Port Authority police responded. Since this was a crime scene, local law enforcement and the FBI were immediately on site to ensure public safety and begin the investigation, which eventually led to the arrest and conviction of the perpetrators. Mass transit services in and around the World Trade Center were seriously disrupted, with service on the NYC subway system suspended on several lines, as well as train service to New Jersey. Streets in lower Manhattan were severely congested by emergency response vehicles. The Brooklyn Battery and Holland Tunnels, as well as major highways, were restricted for use by emergency vehicles only.

FEMA Region II, located about seven blocks north of the center, was immediately apprised of the bombing and monitored response operations. New York Governor Mario Cuomo subsequently requested federal assistance, supported in his request by New Jersey Governor Jim Florio, and on April 4, President Bill Clinton signed the disaster declaration for Public Assistance (Debris Removal and Emergency Protective Measures). Region II set up a disaster field office in the first twin tower on April 6, only days after tenants began moving back into the building.

Agencies and organizations taking part in response and recovery included the New York State Emergency Management Office, New Jersey Office of Emergency Management, NYC Office of Economic Development, New York State Urban Development Corporation, American Red Cross, U.S. Army Corps of Engineers, U.S. Small Business Administration and the U.S. Environmental Protection Agency.

Major Challenges and Lessons Learned

FEMA's Role in Planning for and Responding to Terrorism:

Before the World Trade Center bombing there had been little attention paid to the need for a national approach to dealing with terrorism within U.S. borders. This event, along with the bombing of the Alfred P. Murrah Federal Building in Oklahoma City in 1995 and the sarin gas

attack on the Tokyo subway the same year, brought the threat of terrorism – both domestic and international – to reality. With greater attention to new threats in a changing world order, there has been an evolution in planning and preparedness over the years.

Subsequent to Presidential Decision Directive 39, "U. S. Policy on Counterterrorism," dated June 21, 1995, the Terrorism Incident Annex was added to the Federal Response Plan. This annex defined FEMA's consequence management role in conjunction with the crisis management role of the Federal Bureau of Investigation (FBI). More recently, further requirements for planning, including Continuity of Operations (COOP) plans, have been emphasized. The Region II posture has been strengthened through a process of improving cooperation and coordination with the FBI, by the development of the Region II COOP plan, and by staffing for the planning function.

Intergovernmental and Interagency Coordination:

The success of the response efforts undertaken by the multiplicity of agencies and organizations representing not only differing levels of government, but also different states, demonstrated that its structures do have the capability to respond and to save lives and property even in an extreme crisis. But this experience also showed that preparedness must be an ongoing process, with coordination of planning at all levels. The loss of life during this event, the destruction of property, and the resulting economic disruption were tragic, but even worst case scenarios can readily be imagined – and appropriate preparations must be made.

Hazard Mitigation:

New York Governor Cuomo requested that mitigation include recommendations for security, health, and safety measures for the World Trade Center. Region II supported a comprehensive approach, capitalizing on hazard identification and including risk reduction activities delivered by voluntary, private sector and government agencies. The focus of the mitigation effort was to have a proactive public safety hazard reduction program including planning, public education and the updating of codes. Lessons learned and actions implemented as a result of this incident may make high-rise structures and mass transit facilities safer. The Interagency Hazard Mitigation Survey Team issued a report on May 5, 1993 identifying actions that could lessen the devastating effects of future urban disasters involving high-rise buildings and mass transit facilities.

DR-1067-VI

Hurricane Marilyn

Declared 9/16/95

Overview/Background

Hurricane Marilyn ushered in a new era of more frequent and destructive storms in the Caribbean during the second half of the decade, culminating in seven major federal disaster declarations for the U.S. Virgin Islands and Puerto Rico between September 1995 and December 31, 2000. Hurricane Luis, a Category 4 hurricane that by the luck of the draw skirted the islands to wreak havoc elsewhere in the Caribbean, preceded Hurricane Marilyn only nine days earlier. Marilyn, a strong Category 2 hurricane approaching Category 3, became the worst storm to hit the U.S. Virgin Islands since Hurricane Hugo in 1989.

Summary of Incident:

On September 15, the full force of Marilyn hit the islands with winds of 110 mph, even rising to 120 mph. Tidal surges and flooding accompanied the winds, causing extensive damage to roads, housing, hospitals, public buildings, communications systems, power distribution networks, and water and sewage plants on the islands. It was estimated 80 percent of homes on St. Thomas Island, 40 percent on St. Croix and 60 percent on St. John were damaged or destroyed, with commensurate losses of commercial buildings and infrastructure. Damages to businesses caused serious commercial dislocations and job loss. Tourism, the major industry, sustained grave economic loss due to destruction and damages to hotels, restaurants and other businesses dependent upon the tourist trade.

St. Thomas was hardest hit. It had no power, water or telephone service immediately following the storm. The power distribution system was knocked out, suffering downed poles and damages to major feeder circuits and primary lines. Power was not restored for nearly two months. Water supplies were not restored for several weeks due to damage to the desalination plant and two water storage tanks. The control tower at the airport on St. Thomas was destroyed. Satellite dishes, radio and television broadcasting towers, and residential lines were damaged or destroyed, severely disrupting or even severing communications internally and with the outside world. Nine deaths were attributed to the storm: six on St. Thomas, two on St. Croix, and one on St. John.

Response and Recovery:

From September 10 through September 13, 1995, Hurricane Marilyn gathered strength as it tracked across the Atlantic with a projected trajectory into the Caribbean chain. Both Puerto Rico and the U.S. Virgin Islands executed their emergency operations plans, helped in part by response planning already undertaken in early September for Hurricane Luis. Since the Emergency Response Team-Advance (ERT-A) deployed for Luis had returned to New York, the Caribbean Division deployed a six-member ERT-A to St. Thomas on September 14 to participate in the governor's strategy sessions for initial response, while a four-member team landed on St. Croix. In New York, the regional operations center was activated and a defense coordinating officer contingent was pre-deployed to St. Thomas.

On September 15, the governor requested a major disaster declaration, which was signed by the president on September 16. A full regional ERT-A arrived to augment the pre-deployed teams. The St. Thomas and St. Croix airports were opened for emergency flights only. On September 17, FEMA Director James Lee Witt led a team of senior federal officials from the Department of Transportation and the Small Business Administration, along with the congressional delegates from the U.S. Virgin Islands. They met with the governor and inspected the ravaged areas to ensure that emergency needs were being met. Two Urban Search and Rescue teams were deployed and 50 U.S. Marshals were sent to augment security. The federal coordinating officer and 200 federal personnel arrived to set up the disaster field office at the damaged but useable Frenchman's Reef Hotel on St. Thomas. On September 18, the Emergency Response Team-National (ERT-N White Team) arrived on St. Thomas. Shelters were opened and mass care feeding kitchens arrived.

Department of Defense aircraft evacuated 1,293 tourists from St. Thomas. On September 19, a contingent of Region I personnel arrived to set up a satellite disaster field office on St. Croix, assisted by Mobile Emergency Response Support (MERS) and Mobile Air Transportable Telecommunications Systems (MATTS) teams to establish communications. For eight days, the

ERT-A and ERT-N tackled the challenge of restoring communications with each other and with the mainland.

A major influx of resources poured in, by sea and via a Department of Defense airlift. Disaster field office priorities included the distribution of emergency resources (such as cots, food, water, ice and plastic sheeting) as well as port facility assessment and power restoration. The field office began to administer the full range of response and recovery programs, establishing six fixed site recovery centers, along with mobile recovery information centers, and developing a draft strategy on the prevention of future losses. Once the response operation carried out its mission to provide immediate relief to victims, the ERT-N teams handed off the full recovery operation to Region II and returned to their home base in early October.

Major Challenges and Lessons Learned

The Severity of the Disaster and its Insular Location:

The U.S. Virgin Islands (U.S.V.I.) presents a formidable challenge to response and recovery operations. Remoteness, limited resources, and the need to transport all aid by sea or air make logistics management a nightmare. But lessons learned from the 1989 Hurricane Hugo experience were put to good use in the Marilyn operation.

This major test of the Federal Response Plan (FRP) shaped the ways in which federal agencies coordinated their response efforts, significantly enhancing preparedness planning before the disaster as well as management of the overall response. Such substructures as the ERT-A Teams, ERT-N Teams, and the various Emergency Support Functions such as Urban Search and Rescue teams and Disaster Medical Assistance Teams (DMATS), greatly improved federal response capabilities. Lessons learned in Marilyn have been put to good use in further improving the FRP. New procedures and processes, such as those that identify and rank immediate needs, proved invaluable in an insular environment. Transportation of resources – goods, equipment, material, supplies, personnel – continued to pose issues with respect to timing, scheduling, and tracking, but experience proved the best teacher not only for Marilyn but for future major disasters in the Caribbean.

The First ERT-N Deployment

The first full deployment of the ERT-N was useful in identifying both successes and challenges in implementation of the concept. The proactive response strategy, including immediate team deployment, proved highly beneficial.

Post-disaster reviews stressed the value of deploying experienced staff who are familiar with, and sensitive to, the social, economic and political issues that island residents face.

Mitigation Challenges and Measures Taken

The power distribution network remains a prime target for mitigation. Ongoing projects to minimize damage include the decentralization of power generation and the underground installation of feeder lines.

Within a month after Marilyn hit, the U.S.V.I. legislature adopted stricter building codes for both business and residential structures. Greater enforcement further ensured that most of the rebuilding on the islands adhered to the new rules.

A roofing program was implemented after Marilyn that placed wind-resistant roofing on approximately 600 damaged homes. Almost without exception, the same properties that lost roofs to Marilyn came through Georges with little or no damage.

Overview/Background

Having devastated the U.S. Virgin Islands (U.S.V.I.), Hurricane Marilyn moved on to the Commonwealth of Puerto Rico. Although damages were not as severe in Puerto Rico as in the Virgin Islands. As in the Virgin Islands, the earlier planning for Hurricane Luis (which preceded Marilyn by nine days) served as a valuable preparedness exercise for FEMA's Caribbean Area Division and the commonwealth government.

Summary of Incident:

On September 15, Marilyn struck Puerto Rico causing significant damages in fourteen municipalities in the east central and eastern regions. On September 16, a federal disaster was declared for the islands of Vieques and Culebra, the hardest-hit municipalities. Twelve more municipalities were subsequently added to the declaration. Although the damages were not as severe in Puerto Rico as in the Virgin Islands, an estimated 250,000 Puerto Ricans were affected. The hurricane caused damages to roads, homes and public structures, as well as power losses that affected water supply in some areas. Debris removal was also a challenge.

Response and Recovery:

The regional operations center was activated on September 14 on 24-hour operations for both Caribbean jurisdictions. The Caribbean Area Division was in charge of initial operations in Puerto Rico. Following the disaster declaration signed by the president on September 16, a disaster field office was established, and response and recovery efforts were well underway by September 19. Shelters had been opened even before landfall and the Puerto Rico Department of Education was meeting all feeding requirements. Initial power losses were quickly restored along with the water supply.

Because Vieques and Culebra were the hardest hit areas, immediate assistance was directed to these island municipalities by federal and commonwealth agencies and the American Red Cross. Assistance included shipments of water, food, tents, plastic sheeting, clothing, donations from the mainland and emergency health assistance. Puerto Rico also served as a staging and distribution area for assistance targeted toward the hard-hit Virgin Islands.

This was the first use of the Federal Response Plan for a disaster in Puerto Rico. The comprehensive Region II planning and preparedness exercises, which had been carried out for several years, paid off in a successful disaster recovery operation. As another first, FEMA opened a satellite office of the national tele-registration center, staffed with a fully bilingual (Spanish/English) cadre to answer helpline calls from disaster victims.

Major Challenges and Lessons Learned

Multiple Disaster Operations in the Caribbean, and Inter-Disaster Support

It's hardly newsworthy that a hurricane crossing the Atlantic takes aim at both Puerto Rico and the Virgin Islands. But the uncertainty of the hurricane's path and strength complicates pre-landfall preparations for allocation and deployment of resources and personnel, and a double strike results in long distance response operations in two locations. On the plus side, since Puerto Rico was not as severely affected as the Virgin Islands, FEMA and other emergency personnel

were able to coordinate resources in Puerto Rico to provide critical support for much greater emergency needs in the Virgin Islands:

DR-1088-NJ Blizzard of '96 Declared 1/13/96

Overview/Background

The Blizzard of '96 hit New Jersey and New York hard, dumping up to 32 inches of snow on both states within 48 hours and creating snow removal nightmares for emergency responders.

Summary of Incident: Beginning in the early morning hours of January 7 and continuing through January 9, a powerful winter storm with gale force winds and high waves, dumped near record snows on New Jersey's southeastern coastal counties – Cape May, Atlantic, Ocean, and Monmouth. The beach and dune system, which took a battering during the 1995 hurricane season, suffered breached dunes, scoured beaches and flooded structures. Several recent beach replenishment projects were damaged again. Tidal flooding resulted in further damage to beaches, boardwalks, sand fencing, beach grass, light poles, and park benches in some communities.

The big snow came down hard and fast. Emergency managers immediately shut down the major roadways, granting access to emergency personnel only. The managers also set up evacuations and detours as necessary to ensure public safety. Meanwhile, hospital emergency rooms quickly geared up for an onslaught of disaster victims. Debris piled up along main thoroughfares running parallel to the oceanfront, mainly consisting of beach sand and damaged boardwalks thrown up by high winds and crashing waves, compounded by rising tides.

Response and Recovery: Following a request from the New Jersey governor, four counties in the state were declared a federal disaster area on January 13. At the state's request, Region II then deployed an infrastructure team to the Ocean County emergency operations center on January 17 to conduct a joint FEMA/State preliminary damage assessment of the affected counties.

Major Challenges and Lessons Learned.

Snow Removal Guidelines

The primary issue coming out of this disaster related to snow declarations. FEMA's basic policy on funding for snow removal contained in the disaster declaration was amplified by guidelines intended to restrict funding to the provision of emergency access only. Reimbursements were limited to the costs of equipment, contracts and personnel overtime required to clear one lane in each direction along snow emergency routes (or selected primary roads in those communities without such designated roadways) and routes necessary to allow the passage of emergency vehicles to hospitals, nursing homes and other critical facilities. FEMA continues to develop and refine its snow removal policy.

DR-1095-NY Severe Storms and Flooding Declared 1/24/96

Overview/Background

The most costly disaster in the history of New York State struck on January 19, 1996. A combination of severe storms and massive snowmelt caused widespread flooding, damaging

homes, businesses and public infrastructure throughout much of the state. With a major disaster declaration encompassing 41 of New York's 62 counties, funding of FEMA response and recovery programs amounted to well over \$100 million.

Summary of Incident

During most of January 1996, New York State experienced unusually high amounts of precipitation. From January 7 through 9, the Blizzard of 1996 dumped up to 32 inches of snow on New York within one 48-hour period. On January 17, rainstorms developed, as warm moist air from the western Atlantic and Gulf of Mexico ran into the trailing side of an eastern-moving air mass. The snowmelt amplified the rainfall effects, resulting in some of the worst flooding in New York since 1951.

As rivers and streams overflowed their banks, flooding and ice jams forced evacuations in a number of communities. Roadways and bridges were severely impacted, with many closures due to rockslides, mudslides, washouts and pavement failures. Water systems were breached and waste treatment plants were damaged. Power outages affected significant populations. Ten deaths were attributed to this disaster.

Response and Recovery

On January 20, Region II activated the regional operations center and deployed a liaison to the New York State Emergency Management Office (NYSEMO). On January 23, the governor requested a federal disaster declaration, which was granted January 24. Preliminary damage assessments followed. The disaster declaration covered 41 counties.

Immediately following the declaration, Region II set up a temporary disaster field office (DFO). By February 2, the region had a permanent DFO in Albany, offering a full range of FEMA recovery programs, along with needed assistance through several emergency support functions — namely transportation, firefighting, resource support, and public works and engineering. Help also came from the Small Business Administration, the Department of Housing and Urban Development, the U.S. Department of Agriculture and various voluntary agencies.

Major Challenges and Lessons Learned:

Strategies Required for Hiring and Training Large Numbers of Personnel:

Given the magnitude of this disaster, Region II needed to hire and train a large number of local residents as quickly as possible to overcome a significant shortage of trained disaster assistance employees (DAEs).

Dissemination of Information on Hazard Mitigation

Hazard mitigation measures were not generally known to the public. Unfortunately, people who have suffered property damage following a disaster are usually unaware of the hazard mitigation measures they might take to reduce future damage.

As an integral part of recovery, the joint recovery effort included the development of strategies to promote proven mitigation measures.

Disaster Cost Savings

While this disaster was not catastrophic in terms of destruction or life-saving response requirements, damages caused to homes, businesses and infrastructure by the widespread flooding required extensive expenditures of federal, state and local resources for recovery.

Accordingly, the federal coordinating officer adopted a strategy of long range planning immediately upon establishment of the Disaster field office (DFO). Each organizational element at the DFO was tasked to develop a phase-down plan. As a result, the Albany DFO was closed April 20, less than three months from its opening. Longer term recovery operations were transferred to NYSEMO facilities with no rental cost.

DR-1136-PR

Hurricane Hortense

Declared 9/11/96

Overview/Background

While the onset of Category 2 or higher level hurricanes provides the most worrisome scenario during a hurricane watch, Hurricane Hortense is prime example of the damage that can be done by a Category 1 hurricane that stalls or moves slowly over land.

Summary of Incident: From September 9 through September 11, 1996, Hurricane Hortense, with maximum sustained winds of 85 mph and rainfall up to 25 inches, slowly moved across Puerto Rico. Almost the entire island was affected. The torrential rains caused flash floods, mudslides and storm surge flooding along the south coast. Eighteen deaths were confirmed. Nineteen municipalities sustained extensive flooding, in some areas reaching to the rooftops on one-story homes. As a precaution, 85 percent of the island's power was shut off before the storm hit, which in turn led to a loss of 90 percent of its water supply. Principal roads and bridges were damaged. The storm also affected the agricultural sector, particularly plantain and banana farmers.

Response and Recovery: The Region II regional operations center was activated on Sunday, September 8. The Caribbean Division went to 24-hour operation and placed liaisons at Puerto Rico Civil Defense headquarters. Thirty-four joint preliminary damage assessment teams were placed on standby. The Caribbean Division Director then met with the Governor of Puerto Rico and maintained near-constant contact with the island's defense coordinating officer.

The disaster declaration was signed September 11. When damage assessments revealed the full extent of the disaster, the declaration ultimately covered 71 of the island's 78 municipalities. The disaster field office opened on September 14. That same day, a satellite office of the national teleregistration center was activated, which allowed disaster victims to register for assistance by simply calling a toll-free number. By the 16th, six Disaster Recovery Centers (DRCs) were opened. Mobile DRCs were deployed to support registration and service delivery, mainly focusing on municipalities that lacked adequate communications. In each of the 10 DRCs, Mitigation opened reconstruction information centers, eventually serving more than 40,000 applicants. By September 11th, the American Red Cross had opened 70 shelters housing 10,563 persons.

Recovery milestones demonstrate the success of the joint recovery operation. On September 20, the first Disaster Housing check was disbursed. On October 3, the first Individual and Family Grant check was issued. By October 6th, 100,000 teleregistrations had been taken.

Major Challenges and Lessons Learned

Need for Bilingual Communication Capabilities

There is an ongoing need for more bilingual staff in Hazard Mitigation and Public Affairs. Given the vast number of applicants served by the 10 reconstruction information centers, large quantities of informational publications in Spanish were needed. For this recovery operation, it

took two weeks to obtain sufficient quantities to address demand. Standard publications should be stored in Puerto Rico for easy availability at the outset of any disaster operation on the island. During recovery, Public Affairs developed a substantial number of Spanish-language documents for the "Recovery Times" newsletter and the "FEMA Emergency Information Field Guide," as well as prototype disaster news releases. All critical documents should be translated for use in future disasters.

DR-1196-NY

Severe Winter Storm

Declared 1/10/98

Overview/Background

In January 1998, the most severe ice storm in sixty-eight years battered New York, New England and southern Canada. While severe winter storms are a fact of life in this part of the world, the effects of this ice storm were unprecedented. More than 17 million acres of forests were damaged, threatening the long-term regional economy. Seventeen deaths were attributed to the storm.

Summary of Incident: Beginning January 5, a combination of cold surface temperatures being overrun by a warm moist tropical air mass resulted in record rainfall in New York state. Below-freezing temperatures caused the rain to freeze on contact, producing ice accumulations of three to four inches. Initial impact was felt most seriously in the northern counties due to effects of the ice. Rain and ice melt brought flooding to low lying areas in the western counties.

The ice downed trees and power lines and caused widespread closure of roads, bridges and interstate highways. All told, the third largest dairy farming state in the nation experienced a 25 percent loss in milk production, mainly due to the death of 20,500 livestock and damaged farm equipment. Maple syrup farmers lost trees and \$1.2 million in syrup production. Small businesses and public facilities were damaged or forced to close due to power outages, which lasted up to 23 days. More than 120,000 homes and businesses lost power, and thousands of people were sheltered for an extended period due to flooding or inability to heat their homes. Most tragically, nine people lost their lives.

Response and Recovery: President Clinton declared a major disaster on January 10. The declaration ultimately covered 10 counties. FEMA immediately set up a Disaster field office (DFO) in the DFO facilities located at the New York State Emergency Management Office (NYSEMO) in Albany. An intensive response operation was launched to meet health, safety and other emergency needs. Fort Drum was established as the federal-state mobilization center for critical supplies. Food was supplied for shelters, mass feeding operations and food pantries. Other critical supplies, including generators, cots and blankets, were delivered to the affected counties. Generators and water tankers were transported to the St. Regis Mohawk Reservation and a federal Indian Health Services unit was provided. Assessments of tribal needs and needs of the elderly were undertaken. Four Disaster Medical Assistance Teams (DMATS) were deployed to affected areas. Recovery operations were quickly underway with the opening of Disaster Recovery Centers (DRCs), including a mini-DRC serving the Mohawk reservation.

A primary concern was securing enough generators to meet the most pressing power demands — such as county emergency operations centers that needed power to operate local recovery operations and dairy farms that needed power to milk their animals and cool the milk. Generators were brought in from federal and state sources, including the Mobile Emergency Response

Support (MERS) detachments in Maynard and Thomasville. Generators were also flown in from as far away as Texas and Alabama by the Department of Defense. By the end of January, total power was restored.

Major Challenges and Lessons Learned:

Long-Term Recovery Issues

The president directed FEMA to convene a long-term recovery task force to assist the most seriously affected states, stating that the event would leave a "lasting impact on the region." On February 5, 1998, the task force issued its report, called "A Blueprint for Action: The President's Plan for Recovery from the January 1998 Ice Storm in Maine, New Hampshire, New York and Vermont." The report identified six critical concerns essential to the long-term recovery effort: energy and infrastructure losses, agricultural losses, damage to forests and trees, recreation and tourism losses, health and safety concerns and special population needs. The president directed federal agencies to follow up on specified issues. FEMA was to "aggressively incorporate mitigation into the repair and reconstruction of eligible damaged utilities," and to monitor the progress of recovery.

DR-1247-PR

Hurricane Georges

Declared 9/24/98

Overview/Background

Hurricane Georges — the costliest hurricane in FEMA's history and second only to Northridge as FEMA's costliest disaster — devastated Puerto Rico. U.S. disaster relief exceeded \$1.5 billion. Even for an area with considerable hurricane experience, the devastation caused by this Category 3 hurricane was unmatched.

Summary of Incident: Hurricane Georges started moving across the Atlantic on September 17. It reached its peak intensity September 19, when it was a Category 4 hurricane. The National Weather Service warned the Caribbean Islands to prepare for a worst-case scenario. Georges dealt a glancing blow to the Virgin Islands. Then it struck Puerto Rico September 21 as a strong Category 2 hurricane, at times reaching to Category 3 intensity. After passing over the island municipalities of Culebra and Vieques, Georges transected the main island from east to west for an 11-hour assault, with maximum sustained winds of 115 miles per hour.

All 78 municipalities sustained serious damage from Georges. Heavy rains caused flooding and mudslides throughout the island. Storm surges measured four- to seven-feet high, greatly affecting low-lying areas. The central mountain range took the full brunt of gale-force winds, severely affecting the communities at these higher elevations. More than 215,000 homes were damaged or destroyed and more than 31,400 residents were displaced. Two storm-related deaths were reported. With 98 percent of the transmission and distribution line network destroyed, the entire island was without power following the hurricane. More than 70 percent of the population was still without power a week later. Power outages disrupted basic utilities, including the water distribution system, leaving as much as 75 percent of the island without potable water during the storm and its aftermath. Nearly 600,000 people had no telephone service. The economic losses were estimated at \$315 million for the agricultural sector and \$2 billion for the business and industrial sector. Winds and flooding created extensive debris, making clearance a critical issue.

Response and Recovery: The Caribbean Area Division and New York regional office monitored the approaching hurricane, developing contingency response plans for both Puerto Rico and the U.S. Virgin Islands. On September 18, Region II activated its regional operations center and began deploying an advance team of emergency personnel. By September 19, the team was on standby in San Juan. FEMA headquarters conducted daily videoconferences, which involved personnel from the National Hurricane Center and eastern seaboard states, along with Region II. On September 21, an emergency declaration was issued providing direct assistance at 100 percent federal funding for a period subsequently extended to September 30. The disaster declaration covered all 78 of the municipalities in Puerto Rico for the first time in the commonwealth's history.

Disaster response operations were conducted out of the Caribbean Area Division office until the disaster field office was established on October 5 in San Juan. The initial operational priorities included such response items as water, ice, generators, and plastic sheeting to meet immediate emergency needs. Two staging areas, one at Roosevelt Roads and one at San Juan International Airport, were established. Three fixed Disaster Recovery Centers (DRCs) and 14 mobile DRCs were set up. The joint recovery operation included mass care services and emergency sheltering and feeding. More than 430 shelters were opened, serving 31,474 persons. Voluntary and commonwealth organizations served a total of 1,134,598 meals from 32 field kitchens.

Major Challenges and Lessons Learned

Deployment of Resources for Immediate Response

The major challenge for this disaster operation was logistics. Huge quantities of resources were required for meeting the immediate needs of disaster victims and workers, including food, water, shelter and healthcare. Great amounts of equipment and supplies were also needed, as well as great numbers of disaster workers. Because all external resources had to be flown in, the procurement, scheduling, transporting and administration of assistance were gargantuan tasks. A partial list of resources required for recovery includes almost 19 million pounds of ice, 8.5 million gallons of water, more than 29,000 temporary roofing tarps, and 636,000 pounds of food. Services included the construction of five temporary bridges, the placement of 64,771 temporary roofs within 45 days, and the installation of 283 generators for critical facilities. Close to 4,000 personnel assisted in the recovery process.

Loss of Electrical Power

Widespread loss of electrical power was a critical issue. In addition to the effects on homes and businesses, power loss curtails or destroys the ability to supply potable water, cuts off telephone service, and causes serious health and safety problems by affecting other utilities and critical facilities. Prior to Georges, the commonwealth had not completed its pre-disaster survey of emergency power requirements for critical facilities, and many of these facilities did not have a backup power supply. In addition, a number of FEMA generators were in poor condition or not useable. The 50 packs of generators that had been developed for emergency power contained a large number that could not be used in Puerto Rico due to voltage and phase differences. FEMA and the commonwealth must ensure that these issues are addressed before the start of each hurricane season.

Coordination Between Federal and Commonwealth Agencies

Some federal emergency support personnel had difficulty in locating their commonwealth counterparts, which made information gathering, planning and problem solving extremely difficult until both federal and commonwealth representatives moved to the disaster field office. Effective coordination requires adequate space for co-locating federal and commonwealth personnel at the outset of a recovery operation.

Federal/commonwealth joint training exercises are critical for preparedness and should include actual response participants. The Regional Interagency Steering Committee (RISC) has in the past played a significant role to ensure the involvement of both the federal Emergency Support Functions (ESFs) and their Commonwealth ESF counterparts, and should continue to do so.

Successes and Failures of Buildings to Withstand Wind and Flood Forces Generated by Hurricane Georges in Puerto Rico

On September 30, 1998, the FEMA Mitigation Directorate deployed the Building Performance Assessment Team (BPAT) to Puerto Rico to see how well its buildings and other structures held up to Georges and to make recommendations for improved performance for both hurricanes and seismic events. BPAT concluded that a significant amount of damage caused by Georges could have been avoided if more buildings had been built to Puerto Rico's existing Planning Regulation 7 building code. A lack of compliance with other codes that address flood, wind and seismic loads when building in floodplains further contributed to damages.

BPAT reported that Puerto Rico has taken some important steps since Georges to increase public safety and reduce property damage, but recommends further support for the positive mitigation education efforts being undertaken by the government and universities. BPAT applauded the commonwealth government's decision to adopt the 1997 Universal Building Code as an interim step toward adopting the International Building Code when it becomes available.

DR-1248-VI

Hurricane Georges

Declared 9/24/98

Overview/Background

Hurricane Georges — the worst storm of the 1998 Hurricane Season — killed 600 people in the Caribbean. All in all, Georges tops the list of FEMA's costliest hurricanes—with a \$2.4 billion bill for U.S. disaster relief for U.S. interests, including Alabama, Florida, Louisiana, Mississippi, Puerto Rico and the U.S. Virgin Islands (U.S.V.I.). FEMA fielded more than 15,400 applications for disaster assistance from individuals and families, mostly in Puerto Rico.

Although Hurricane Georges devastated Puerto Rico, the effects of the storm were far less destructive in U.S.V.I. This was partly due to the storm track, which passed by, but not directly over, the islands. Mitigation measures put in place as a result of previous hurricane disasters also helped soften Georges' blow.

Summary of Incident

Hurricane Georges moved across the Atlantic from September 17 to September 20, 1998. It reached its peak intensity on September 19, when it was a Category 4 hurricane. Georges struck the Virgin Islands on September 21-22 as a Category 3. Despite its strength, Georges proved far less devastating than had been feared. The path of the hurricane carried its eye over the east end of St. Croix and continued along the north coast, with the center passing approximately 35 miles

southeast of St. Thomas. Sustained wind gusts were reported at 110-120 mph on St. Croix, and 95-100 mph on St. Thomas.

Effects of the storm were most pronounced on St Croix, with power outages, damaged infrastructure, and roadway closures from considerable debris. Numerous homes were damaged, but few were destroyed. Some homes sustained major damages on St. John. Crop losses included mango, avocado, pepper and sugar plants, most of which were uninsured. There were minor damages to airports, but by September 23 the St. Thomas airport was open.

Response and Recovery

The Caribbean Area Division and New York regional office monitored weather reports for the approaching hurricane and developed contingency plans for both Puerto Rico and the U.S. Virgin Islands. On September 18, Region II activated the Regional Operations Center (ROC) and deployed the Emergency Response Team-Advanced (ERT-A). The team was fully assembled in St. Thomas by September 20, prior to Georges' landfall on September 21. FEMA headquarters conducted daily videoconferences. On September 21, an emergency declaration was issued, followed by a federal disaster declaration on September 24.

Disaster operations were initially conducted from the initial operations center in St. Thomas, which had been stocked and readied prior to the disaster. Operations were relocated to the disaster field office in St. Croix on September 30.

Major Challenges and Lessons Learned

Mitigation Lessons Learned – and Implemented

Hurricane Georges put to the test mitigation plans and projects that had been developed as a result of previous disasters. Results were excellent. Before Georges hit, public and private entities had retrofitted or rebuilt most of the structures on St. Croix. As a result, damages were limited to less than two percent of the homes on the island. All hotels survived with minor or no damage. The interruption of power was limited to just 15 percent of the island, with power fully restored in just three weeks. Schools and other public structures provided safe haven for residents.

Other examples of mitigation successes include:

The Home Protection Roof Program (HPRP), developed as a mitigation measure following Hurricane Bertha in 1996, proved its worth when HPRP sites were inspected following Georges. A few HPRP sites sustained minimal damage. Most went undamaged.

U.S.V.I. Department of Education upgraded or constructed its buildings to comply with the tougher codes that were recently implemented. As a result, all Department of Education structures are designed to withstand hurricane winds and resist earthquakes. After Georges, the schools reopened within five days.

Property and casualty agents licensed in the Virgin Islands instituted policies that offered discounts to policyholders when construction complies with the building code and incorporates proven mitigation measures, such as shutters, adequate steel reinforcement and roof straps, and the elimination or reduction in length of roof overhangs. After Hurricane Georges, insured losses totaled less than three percent of the value of the insured properties.

At the St. Croix disaster field office, FEMA and the Virgin Islands Territorial Emergency Management Agency (VITEMA) held a joint critique of the joint response and recovery effort. The resulting agreements and strategies were summarized in "A Blueprint for Improvement,"

which focused on readiness planning for future disasters. Named sections included joint FEMA/VITEMA readiness, ERT-A readiness, the St. Thomas bunker, and profile book revision. In one joint agreement adopted as part of the critique, the Region II director recommended that planners develop rapid needs assessment capability, using local FEMA Disaster assistance employees (DAEs) who did not have to be deployed to the U.S.V.I. disaster. DAEs were subsequently selected and trained for this function.

DR-1295-NJ

Hurricane Floyd

Declared 9/18/99

Overview/Background

Ranked by U.S. disaster relief costs, Hurricane Floyd was the second most costly hurricane to strike the United States since 1993. It resulted in federal disaster declarations for thirteen states along the Eastern Coast.

By the time Floyd reached New Jersey on September 16, 1999, it had been downgraded to a tropical storm, but the effects of the storm were disastrous for a number of New Jersey communities. The storm then moved on to New York, where it caused comparable damage, resulting in DR-1296-NY. The New York operation also faced the threat of the West Nile Virus.

Summary of Incident

Moving across the Atlantic, Hurricane Floyd reached its peak intensity, a strong Category 4 at 155 mph, on September 13, about 300 miles east of the Bahamas. Weakening to a tropical storm, Floyd headed up the Eastern Coast to New Jersey, where it wreaked havoc over the entire state, from south to north.

Particularly hard hit were the central and northern counties, as well as the coastal areas, which sustained major erosion. Heavy rains caused extensive flooding and flash flooding as major river basins in highly urbanized areas, including the Passaic, Raritan, Hackensack and Millstone rivers, crested beyond the flood stage. In addition to road closures, flooding or winds damaged thousands of structures, both private and public. Some 436,221 customers were without power, while 213,000 were without water. The morning after, more than 6,700 people had been displaced from their homes into shelters. There were four confirmed deaths in New Jersey as a result of the storm.

Response and Recovery

The regional operations center, already activated for Hurricane Gert, transitioned to Floyd as Gert passed without incident. The Emergency Response Team-Advance (ERT-A), which had deployed to Puerto Rico in anticipation of a Floyd landfall, was redeployed to Trenton, while another ERT-A that had been deployed to the Virgin Islands was sent on to New York. In New Jersey, preliminary damage assessment teams were dispatched. Responding to the governor's request, on September 18 the president declared an emergency covering all 21 N.J. counties. On September 19, the president issued a federal disaster declaration covering nine counties. The disaster field office was opened in Piscataway, N.J. on September 23. Three Disaster Recovery Centers (DRCs) were opened October 1, and two Mobile DRC teams were deployed, visiting 13 sites from October 13 to October 30. Most DRCs were closed by the end of October.

Major Challenges and Lessons Learned:

Safety and Health Concerns

This was an unusual disaster from a health and safety standpoint due to concerns regarding West Nile Virus and potable water. The most serious concern was the presence of the West Nile Virus in New York, within a 100-mile radius of the disaster field office (DFO). Working with health and medical services personnel, DFO safety officers monitored the status of the outbreak, conducted briefings for fellow staff, and distributed bulletins on prevention of mosquito bites. A significant concern was that bug spray was not readily available at the outset of the operation. Concerns relating to potable water raised the specter of potential illness for employees from eating in restaurants or drinking water at hotels, but both water coolers and bottled water were provided at the DFO, and employees were encouraged to take bottles back to their hotels. No employees reported health problems.

REGIONAL INNOVATIONS

Damage Prevention

Damage Prevention includes measures taken under the Hazard Mitigation Grant Program (HMGP) to prevent future losses by taking measures aimed at reducing the effects of disasters.

Project Impact: Building Disaster-Resistant Communities is featured below as an extension of the mitigation concept.

Hazard Mitigation Grant Program Innovations and Success Stories

In Region II, projects include such mitigation measures as structural hazard control, retrofitting, floodproofing, acquisition and relocation of structures from hazard-prone areas, and development of state or local standards to protect structures from damage.

Mitigation Measures

Following the devastation of Hurricane Georges in September 1998, Region II personnel from both the Caribbean and New York offices worked with the government of Puerto Rico to develop a \$240 million Safe Housing Program, using \$190 million of HMGP assistance awarded by FEMA.

In the U.S. Virgin Islands (U.S.V.I.) after Hurricane Marilyn in 1995, FEMA helped finance a mitigation program by the Virgin Islands Water and Power Authority. Its primary objectives were to strengthen power poles and to bury crucial electrical power lines, particularly those serving major urban areas and critical facilities.

Under the flood mitigation assistance program, FEMA assisted the Village of Freeport on Long Island, N.Y., a *Project Impact* community, with moving 20 homes out of harm's way. FEMA paid 75 percent, and the homeowner 25 percent of the cost of elevation, plans, and permitting. Previously, these homes had been repeatedly damaged by coastal and tidal flooding, with frequent claims made by residents under their flood insurance policies.

Acquisitions/Buyouts and Relocation of Structures

The proactive approach taken by Region II toward acquisition of damaged and destroyed flood-prone properties in Puerto Rico resulted in the approval of a \$20 million property acquisition project on October 8, 1996, less than four weeks after Hurricane Hortense.

On October 4, 1996, Region II approved the first property closings for the first acquisition project in New York State. Ultimately, 23 structures in Clinton County were bought out.

Special Projects

In the U.S. Virgin Islands, a \$30 million program to replace roofs damaged or destroyed by Hurricane Marilyn has become one of the success stories of disaster mitigation efforts. More than 400 roofs were replaced in this first program of its kind in the nation. As a result, the project became not only a roofing program but also a mitigation project for the whole house. The project also turned into a training program for local contractors who learned to use new construction methods developed for Virgin Islands housing.

Building Code Adoption

During the latter part of 1998, in coordination with the Mitigation Directorate, FEMA headquarters and the Region II Mitigation Division facilitated the emergency adoption of the Uniform Building Code by Puerto Rico and worked with the commonwealth toward regular adoption of the same code.

HMGP Education Programs

During 1997 the Region II Mitigation Division worked with the New York State Emergency Management Office (NYSEMO) to structure a state-wide education and awareness program as a top HMGP priority in support of *Project Impact: Building Disaster Resistant Communities*.

In New Jersey, HMPG programs included emergency preparedness workshops for in-school teacher training and a grant to the Salvation Army for an educational program on floods, earthquakes and tornadoes.

In Puerto Rico, "Club Miti" was the name given to a coloring book that covered a variety of natural hazard issues. Distributed to schools, churches and malls, the coloring book has gone through several reprintings, and a private sector sponsor has expressed interest in assisting in future reprinting to ensure continued availability of copies.

Also in Puerto Rico, the "Hurricane Mitigation Guide" explains what a hurricane is, what early warning notices are available, protective measures during the storm, and standards and techniques for rebuilding and construction. Several reprints of this popular guide have been made.

And finally, everybody's favorite character is "Mitigation Marvin," a school-based program featuring a loveable mongoose. The cartoon character was developed by a schoolboy in an island-wide competition during the Hurricane Marilyn operation in the Virgin Islands.

Project Impact: Building Disaster Resistant Communities

Region II's state partners and their communities have demonstrated their commitment to *Project Impact* by developing strong partnerships and making the decisions that can shape their futures for the better. A number of these partnerships have potentially high impact in their communities. For example

Rahway, N. J. has been greatly assisted by Merck Pharmaceuticals, while the town of Erwin, N. Y. has been helped by Corning Glass. St. Croix has an outstanding partner in the Hess Oil Virgin Islands Corporation.

Innovations introduced or carried out by Region II have included working with *Project Impact* communities supported by FEMA funding, as well as freestanding communities supported by private sources. Both receive technical assistance through *Project Impact*.

Another example of an innovative approach to *Project Impact* can be found in Culebra, P.R., where island leaders created a private nonprofit organization, called Project Impact Inc., in order to receive contributions from other sources and to guarantee continuity of the concept. In St. Croix, U.S.V.I., a similar nonprofit has been developed, using an existing entity as the basis for the new organization.

Project Impact 1997

As FEMA headquarters tested the concept of disaster resistant communities with seven pilot communities, Region II pulled together a *Project Impact* task force to establish long-term goals and strategies for the region.

In the meantime, NYSEMO was developing its highly successful Joint Loss Reduction Partnership Project, made up of business leaders and key federal, state and local government officials concerned with the potentially devastating consequences of business disruptions in their communities. With a \$250,000 grant from FEMA, NYSEMO focused on partnerships between business and government to develop measures making businesses disaster resistant.

Project Impact 1998: *Project Impact* achieved a number of early successes during its first full year of operation. The Region II director and other personnel participated in a number of business and industry meetings in New York City during this period, using these opportunities to promote *Project Impact*.

On March 5, Region II and NYSEMO sponsored a kickoff meeting for six communities nominated by the state. Of these, the Village of Freeport and City of Rye were subsequently selected as the first FEMA Region II *Project Impact* communities, along with Trenton, N.J. and Culebra, P.R.

The region's first Memorandum of Agreement (MOA) signing ceremony took place on September 17, 1998, hosted by the Village of Freeport on Long Island, N. Y.

Project Impact 1999

The cities of Rahway, N. J. and Buffalo, N.Y. became *Project Impact* communities in 1999, along with the island of St. Croix, U.S.V.I. Also during 1999, several more communities were able to successfully negotiate MOAs with their local partners as the prerequisite for their own formal signing ceremonies:

On March 10, the island municipality of Culebra, P. R. held two *Project Impact* signing ceremonies – one in the governor's palace in San Juan and the other in Culebra. Culebra was honored to be the first *Project Impact* community outside the continental United States.

The ceremony for Trenton, N.J. (April 9) was attended by the associate director of the Mitigation Directorate, and the administrator of the U.S. Fire Administration.

The City of Rye, N.Y. held its signing ceremony (April 26) on a pier over Long Island Sound. St. Croix, U.S.V.I. held a gala signing ceremony August 18

Project Impact 2000

In 2000, nine *Project Impact* communities were named in Region II, including the Borough of Avalon, N.J., which is not supported by any FEMA funds. Besides Avalon, the newly named included Stafford Township and Ocean City in New Jersey and the Village of East Rockaway, Village of Waverly, Town of Dryden, Town of Eden and Town of Irwin in New York.

The ninth community was the municipality of Bayamon in Puerto Rico. Its signing ceremony was held May 11, 2000.

Several *Project Impact* communities in the Waverly Valley celebrated their accomplishments on May 18, when private and public partners came together for the first multi-state signing event, further solidifying the partnerships forming amongst groups in New York and Pennsylvania. Public participants included representatives from the two states, two counties, and six other jurisdictions involved. Smaller ceremonies were held concurrently in Waverly N.Y. and South Waverly, Penn., followed by the main ceremony held in the middle of a bridge spanning the state line, symbolizing efforts to reach across borders.

Reinvention

The major agency reorganization in 1993 brought new programs and initiatives, as well as improvements in FEMA's basic programs. Although these initiatives have been inspired and directed by FEMA headquarters, they have been enthusiastically received and carried out by Region II, which has made significant enhancements over the years:

Strategic Planning: Goals and Performance Measurement

In 1996, Region II developed a supplemental plan that served as an early action plan for carrying out the agency's strategic goals at the regional level. Subsequent planning meetings involved staff at all levels of the regional office.

The year 2000 brought a renewed focus on performance measurement. Region II initiated a process of developing program baselines for major programs in order to establish a means to measure effectiveness, quality, and efficiency over time. This process continues, with baselines being developed to provide realistic and appropriate performance standards.

New Programs and Initiatives

Partnerships among community leaders, governing officials, voluntary organizations, and the private sector gain greater importance as communities develop their own strategies to mitigate the effects of future disasters.

An increased awareness of the need for addressing environmental and historical preservation concerns when responding to an emergency or undertaking long term recovery projects was one of the products of reinvention in FEMA. At the Region II level, the position of Environmental Officer reflects the agency's commitment to processes for ensuring compliance with law and regulations.

The threats to human life and safety posed by terrorism have become a leading source of concern in a dangerous world. Both the 1993 World Trade Center bombing and the 1995 Oklahoma City bombing demonstrated that this nation is not immune to acts of terrorism. In an all-hazards approach to planning for response to these threats, Region II has developed a plan to move to alternate operating facilities should the regional office experience a serious disruption in operation. The region has also begun to develop an expertise in planning for FEMA's consequence management role under the Federal Response Plan in the event of a terrorist

incident. A critical element in regional planning has been the development of partnerships with the Federal Bureau of Investigation (FBI), specifically pairing up with field offices operating in key urban centers to strategize on counter-terrorism plans. The physical exchange of FBI and FEMA Region II liaisons during the Y2K rollover on New Years Eve 2000 is a prime example of how far the region has come in achieving an effective working relationship with the FBI.

Partnership

FEMA has placed special emphasis on partnerships in program development and in delivery of assistance. In Region II, partnerships have come to encompass a wide variety of activities in addition to its historic partnership with the American Red Cross and other voluntary agencies in disaster response.

Partnership with Other Federal Agencies and States.

The Regional Interagency Steering Committee (RISC) takes pride as the most comprehensive partnership with other federal agencies at the regional level. Established under the aegis of the Federal Response Plan, RISC serves as the primary planning and preparedness mechanism for bringing the full resources of the federal government to bear in any disaster. The 12 federal emergency support functions (ESFs) access the resources and authorities of the 27 signatory federal departments and agencies. Region II has always placed primary importance on the involvement of its states with RISC, including co-hosting meetings held within their jurisdictions. State participation in RISC meetings, training activities, and exercises is an essential element of planning for "real time" disaster response.

Partnership Including the Business Sector and States

Region II has supported a number of activities to foster healthy relationships with its state partners and the business sector. For a number of years, the region has participated in meetings of the New York City-based Contingency Planning Exchange (CPE), which functions as a forum to exchange practical information and ideas on contingency planning and disaster recovery.

Other initiatives have involved the states directly:

Under FEMA's disaster resistant communities initiative, the New York State Emergency Management Office (NYSEMO) was granted \$250,000 for the development of a business and industry loss reduction program.

The New Jersey Office of Emergency Management (NJOEM) has fostered partnerships between the private and public sectors, addressing both all-hazard initiatives and single-focus objectives that tackle specific challenges, such as food distribution and mental health needs during an emergency. NJOEM also recognized the need to partner with businesses to enhance the emergency notification system.

Region II's Caribbean Division, the American Red Cross, and the Commonwealth of Puerto Rico have coordinated with the business sector to promote business recovery when disaster strikes the island.

In the Virgin Islands, the Caribbean Division, the American Red Cross and the Virgin Islands Territorial Emergency Management Agency have focused on coordination with local chambers of commerce to identify measures needed to bring the economic sector back on line after a disaster occurs.

Partnership with Academic Institutions

A Region II-based consortium, called the New York City Area Consortium on Earthquake Loss Estimation and Mitigation, was developed during fiscal year 1998 to study the potential direct losses and economic impacts of a range of earthquakes within the NYC metropolitan area. In partnership with the Multidisciplinary Center for Earthquake Engineering Research (MCEER), FEMA awarded a \$300,000 grant for the three-year study, as part of the ongoing development of HAZUS, the natural hazard loss estimation methodology software program that provides a single standardized approach for estimating earthquake losses.

Partnership with Foreign Governments

Region II has been called upon primarily because of its location in New York City and the Caribbean. The New York Region II office is regularly visited by delegations from other countries for briefings on its procedures for management of disaster response under the Federal Response Plan. The majority of its visitors have come from a number of Asian countries, including representatives of Japan and the People's Republic of China.

Region II personnel, including staff in the Caribbean Area Division, have traveled by invitation to other countries to provide technical assistance. On four separate occasions during the first two months of 2000, Region II personnel were tasked to provide the benefit of their experience to assess emergency management needs in the Dominican Republic, Honduras and Nicaragua. In July, a similar technical assistance visit was made to Guatemala. One of the Dominican Republic visits included participation in the U.S. Department of Defense SOUTHCOM Humanitarian 2000 Exercise.

Region II has participated in a number of joint exercises with its Canadian partners, most notably Response 98. Because disasters know no borders, Region II participates with other FEMA regions that border Canada, in the United States/Canada Consultative Group. Established to explore opportunities for information sharing and cooperation, the Consultative Group has undertaken a number of cross-border activities and has set up working groups with members representing both nations to address issues of mutual concern.

Customer Service

Special Needs Program

The special needs program was developed during a disaster operation to address the disaster-related needs of certain people who face unique challenges, such as senior citizens and people with disabilities.

Individuals with special needs may be identified through referrals from FEMA's toll-free hotline, Community Relations teams, or housing inspectors. Referrals may also come from state, local, and voluntary agencies. Once a referral is received, the special needs office contacts the individual and they work together on a case-by-case basis to expedite home inspections, temporary lodging arrangements, and other assistance. The special needs office is a joint effort of

Teleregistration Service for Spanish-Speaking Disaster Victims

On October 11, 1994, Region II submitted to FEMA headquarters a position paper examining the feasibility of establishing a satellite national teleregistration center in Puerto Rico (NTC-PR) to serve Spanish-speaking disaster victims throughout the country. FEMA's experience with Hurricane Hugo, Hurricane Andrew, the Northridge Earthquake, and other disasters in states

with significant Spanish-speaking populations, demonstrated a need for bilingual capability to serve this large and growing citizenry.

The Region II initiative was developed with headquarters' approval of \$400,000 to establish a center in Trujillo Alto as part of the Hurricane Marilyn recovery effort. NTC-PR was operational on September 25, 1995 with a capacity of 96 teleregistration service representatives (TSRs). The facility was expanded after Hortense and again after Georges, based upon the magnitude of these disasters, and can now accommodate as many as 800 employees working in shifts. The TSRs are brought on when needed while a skeleton staff manages daily operations.

Under management of the Denton National Processing Service Center, NTC-PR provides support to all disasters within Puerto Rico and for any disasters state-side that require Spanish-speaking assistance, such as Hurricanes Bret, Dennis, Floyd and Irene. The NTC-PR is an innovation that has markedly increased FEMA customer service nationwide. A report on the Government Performance and Results Act, released July 18, 2000 by the Senate Committee on Appropriations, cited the teleregistration process as one of FEMA's initiatives that have resulted in lower administrative costs and improved customer satisfaction.

Rapid Response

Testing FRP Response Structures – Lessons Learned

Federal Response Plan structures and procedures are subjected to ongoing review and modification. The Regional Interagency Steering Committee (RISC), the emergency support functions (ESFs), the Regional Operations Center (ROC), the Emergency Response Team - Advance (ERT-A) and the Emergency Response Team (ERT) are likely to remain the foundations of disaster response.

Region II has made extensive use of "lessons learned" from its After Action reports and other analyses to identify operational shortfalls and determine the corrective actions required. This is particularly the case with respect to the special challenges presented by the Caribbean, where these analyses have served the region well. The region has learned the benefits of pre-hurricane season preparedness planning; realistic initial response resources lists; time-phased force deployment of resources; and, most importantly, mitigation measures that really work to diminish the effects of future hurricanes.

Lessons learned from Region II's disaster operations in New York and New Jersey, while generally not as dramatic as in the Caribbean, are no less valuable. The value of a long-term recovery task force to deal with the lasting impacts of wide-scale destruction was demonstrated when a severe winter storm hit in January 1998. Flooding disasters and snow emergencies bring their own challenges, and Region II continues to critique operations to improve response and recovery operations.

Exercises for Preparedness and Training

Response 94, conducted May 13-15, 1994, tested and evaluated emergency management systems in an earthquake scenario for the U.S. Virgin Islands (U.S. V.I.). This was the first full-scale, multi-hazard exercise involving both federal and territorial emergency personnel conducted in Region II.

CARIBEX 95, March 14-15, 1995, tested preparedness for a catastrophic hurricane in the Caribbean, including both Puerto Rico and the Virgin Islands. This exercise tested not only the state operating plans, but also Department of Defense support capabilities and the implementation of the Federal Response Plan by Region II and the ESFs.

HURREX 97 was conducted in the Virgin Islands, with participation by staff from the Caribbean Division, the Preparedness, Training & Exercises Division, and the Response and Recovery Division. The defense coordinating element, along with ESFs for transportation, mass care, and public works and engineering, tested their roles and responsibilities under the Federal Response Plan. The exercise also tested the operational capabilities of the territory's emergency operations centers located on the three major islands, as spelled out by the newly developed Territorial Response Plan.

Response 98, which has been described as the largest peacetime exercise ever held in the United States, was conducted the week of April 19, 1998 in conjunction with Region I and the neighboring Canadian provinces. The scenario, based on a Category 4 hurricane hitting Regions I and II, involved representatives from federal, state and local jurisdictions, as well as Canadian provinces. The exercise not only validated federal response capabilities under the FRP, but also proved the operability of the renovated Regional Operations Center (ROC) facility in the New York regional office.

By federal law, commercial nuclear power plants must develop plans and conduct exercises to prepare for any offsite accident. The Salem/Hope Creek, N.J. exercise of May 5-7, 1998 was the largest ingestion pathway exercise ever held in the nation to date. Thirteen federal agencies and dozens of state and local agencies from New Jersey participated in the mock scenario, pretending people living near the plant ingested foods or water contaminated with radiation. For the first time, Response and Recovery personnel from FEMA headquarters and Region II played a response cell that simulated a federal disaster and the establishment of a disaster field office. The exercise resulted in the identification and resolution of key challenges presented by the declaration process, involving provision of assistance to the community. On May 24-25, 1999, a similar response cell was played during the Indian Point 2 Ingestion Pathway Exercise in New York. And again, participation by Response and Recovery brought up significant issues that had not been addressed in former radiological preparedness exercises.

Caribbean Area Division

The establishment of a permanently staffed Caribbean Area Division in San Juan, Puerto Rico, has markedly improved the region's capabilities to respond to emergencies in the Caribbean, in terms of timeliness and effectiveness. Experienced personnel continuously staffing a fixed site in the Caribbean ensures a constant FEMA presence and an immediate response to any major disaster. Throughout the year, personnel from the Caribbean division discuss program and preparedness issues with the governments of both Puerto Rico and the U.S. Virgin Islands (U.S.V.I.), greatly facilitating transition to a disaster operation. In March 2000, the division moved into a new office, which can serve as an emergency operating center or a disaster field office for a small- to medium-sized disaster operation. The presence of the Caribbean Area Division has enabled FEMA to dramatically reduce response time to any disaster in Puerto Rico or U.S.V.I., while saving costs formerly associated with year-round travel requirements for employees based in the New York regional office.

Initial Operations Facility - The Virgin Islands Bunker

The Initial Operations Facility (IOF) in St. Thomas – often called the Virgin Islands Bunker – was developed to meet the need for a safe place to pre-deploy Emergency Response Team-Advance (ERT-A) personnel before a hurricane's landfall and to ensure rapid response capability for the U.S. Virgin Islands (U.S.V.I.). The lack of safe and adequate working space for personnel

deployed on ERT-A teams had been a constant problem, particularly given the vulnerability of the islands to dangerous hurricanes.

Since the territory's emergency operations center in St. Thomas is far too small to house ERT-A, team members were obliged to either "ride out" a hurricane in unsafe conditions or wait until the storm passed before deploying to U.S.V. I. Because hurricanes often knock out communications and disrupt air traffic control in the Caribbean, early deployment has been hazardous as well. To address these problems, Region II successfully negotiated an agreement with the Federal Aviation Administration (FAA) to secure an FAA-owned World War II ammunition bunker in St. Thomas. With funding provided by FEMA headquarters, the bunker was converted into the IOF in 1998. The IOF provides a secure location for a pre-deployed ERT-A, either from the Caribbean Area Division or the New York regional office. The IOF also ensures communication with the Caribbean Area Division, the regional operations center in New York, the Emergency Support Team at FEMA headquarters, and the Virgin Islands Territorial Emergency Management Agency.

Region II Challenges

Region II faces a number of challenges, some of which it shares with fellow regions, while others are unique to its special circumstances. The most obvious challenges arise out of responding to a critical event in an insular area, such as the Commonwealth of Puerto Rico or the Territory of the U.S. Virgin Islands. Other challenges come up with respect to the U.S. mainland, in particular the greater metropolitan area of New York City (NYC), N.Y. and Newark, N.J. A huge population center with national and multi-national business interests, NYC is the financial and media capital of the nation, and serves as a major travel and transportation hub. The presence of the United Nations and foreign embassies and consulates makes NYC an international center as well. These circumstances require flexibility and innovation in dealing with actual or potential crises.

Response and Recovery Operations in the Caribbean

The primary response and recovery issue facing Region II, with respect to its Caribbean jurisdictions, is the fact that they are geographically isolated islands. All assistance has to be brought in by air or sea. The second significant issue is the vulnerability of the islands to natural disasters. Both the Commonwealth of Puerto Rico and the Territory of the U.S. Virgin Islands (U.S.V.I.) are situated in a tropical, flood prone area and both are partially located on major earthquake faults, which threaten major population centers. To make matters worse, more frequent and destructive tropical storms and hurricanes have become the norm since the mid-1990s. Beginning with Hurricane Marilyn in September 1995, five major hurricanes have struck one or both Caribbean jurisdictions, resulting in seven major disaster declarations. More than a dozen other hurricanes and tropical storms have narrowly missed the islands. This weather pattern is predicted to continue for years to come.

The effects of these conditions on people, communities, and institutions, particularly given the frequency of severe weather events, are incalculable. Governmental structures may be affected or even overwhelmed. Both Puerto Rico, with a population approaching four million residents, and U.S.V.I., with approximately 119,000 inhabitants, face the reality of limited resources to deal with the devastation that confronts them all too often.

For FEMA Region II, the basic challenge is timely provision of assistance to meet life-saving, health, and safety needs. Water, food, shelter, ice, generators, roof tarps, medical supplies, and

specialized medical or rescue teams must be transported from the mainland. FEMA has even had to bring in communications to restore operability to airports. The response personnel themselves face the rigors of functioning in the midst of devastation, and are subject to such health hazards as dengue fever.

Given the difficulties involved, FEMA response has been extremely effective in preventing loss of life and the outbreak of major health and safety problems. Region II has historically placed high importance on planning and preparedness as year-round activities aimed at finding solutions to the unique problems faced in responding to Caribbean disasters:

The establishment of the Caribbean Area Division as a permanent facility in San Juan not only expedites response operations, but also assists in the development of effective preparedness, response, recovery, and mitigation strategies for Puerto Rico and the Virgin Islands.

The development of the Initial Operations Facility in the Virgin Islands (IOF) has enabled Region II to pre-deploy ERT-A personnel to a safe facility, wait out the storm, and immediately begin damage and needs assessment in coordination with VITEMA, while retaining communications capabilities with the Regional and National decision-makers.

Operational and procedural innovations, including the development of Initial Response Resources (IRR) listings, and Time-Phased Force Deployment (TPFDL) of resources, have expedited the provision of assistance.

The Challenges of Potential and Actual Crises

The recurring use of the New York City (NYC) metropolitan area as the locale for special events increases the potential for incidents endangering its residents, visitors, and institutions. The challenges of contingency planning for worst-case scenarios will continue as long as these events are held in NYC. In addition, crises such as the TWA Flight 800 tragedy cannot be foreseen but may call for an unusual or expanded role for FEMA.

Special events normally involve monitoring and coordination with state and local emergency management personnel prior to the event and the deployment of FEMA liaisons throughout its duration. Over the years, joint planning activities with other federal, state and local emergency management personnel have included the World Cup Soccer Games in June 1994, the Woodstock 25th anniversary in August 1994, the Summer Olympic Games in July 1996, OPSail 1996, the Goodwill Games in July 1998, and OPSail 2000/International Naval Review in July 2000. Since these events attract large numbers of spectators and bring with them the potential for serious problems, Region II will continue to play a major role in contingency planning with its federal, state and local partners.

OPSail 2000

The coordination required for a major event is best illustrated by the Operation Sail 2000/International Naval Review, July 3-9, 2000. OPSail was officially designated as a National Special Security Event, giving the U.S. Secret Service lead responsibility for security planning. The Federal Bureau of Investigation (FBI) retained the lead for crisis management and FEMA headed up consequence management, in accordance with the Federal Response Plan. From July 2-9, the regional operations center was activated for a communications and monitoring watch with all emergency support functions placed on alert. FEMA liaisons were deployed to the U.S. Coast Guard, U.S. Navy, FBI-NY Command Posts, the U.S. Secret Service Multi-Agency Center, and the New York City Emergency Operations Center, to monitor developments and to provide technical assistance. An Emergency Response Team – Advance

was placed on alert for deployment to the alternate regional operations center, located at the Environmental Protection Agency campus in Edison N.J. in the event of a power loss by the ROC at the Regional Office. The event passed without incident and was a successful test of coordination and planning capabilities at all levels.

Y2K Rollover

Probably the most aggressive preparation for a special event undertaken by Region II was the Y2K rollover. The Region II Y2K Workshop held in Newark, N.J. on February 23-24 was attended by more than 200 federal, state, and local emergency managers. It served to identify the vulnerabilities and the planning needed to mitigate potential Y2K consequences. With public-private partnerships seen as the key to success, follow-up sessions were held within each state that involved corporate representatives.

Preparation for the actual rollover required the development of an alternate regional operations center (ROC) in Piscataway, N. J. The alternate ROC was required to ensure continuity of operations, considering that the regional office lacked backup electrical power when the possibility of outages existed as a major Y2K issue.

During the event, liaison personnel were deployed not only to the state emergency operations centers, but also to the New York City Emergency Operations Center, and to the FBI NY command posts, thus ensuring a high level of coordination at all governmental levels. The success of the entire operation was due in no small measure to the preparedness activities that had taken place throughout the year.

TWA 800

With the downing of TWA Flight 800 on July 18, 1996, FEMA Region II was placed in an unusual and difficult role. Its initial charge was to support the National Transportation Safety Board (NTSB) recovery mission by staffing a report cell at the NTSB East Moriches Command Center, on Long Island, N.Y. FEMA was to ensure coordination between the many federal, state, local and voluntary agencies engaged in activities on behalf of the families of the crash victims. The second and more significant operation was put into place on July 25 when President Bill Clinton visited the site, along with Director James Lee Witt and Region II Director Lynn G. Canton. At that time, the region's role was expanded to include support to the NTSB family representative, who had been operating alone.

The Region II mitigation director and selected employees set up operations at the Ramada Inn (JFK Airport) staffing a family information table through August 3. FEMA personnel also assisted the NTSB Representative by conducting family briefings in his absence, writing reports, and developing a notification strategy for family members to help expedite the closure of the Ramada operation. On August 5, the operation was relocated to the FEMA Region II office, where staff phoned the families of victims whose bodies had not been recovered. About 30 families were contacted on a daily basis and were provided reports on the status of recovery operations at the crash site as well as updates from the medical examiner's office. The operation was completed by the end of the month. As a result of this experience, the NTSB subsequently developed a family assistance capability.

REGION III

INTRODUCTION

Overview

FEMA Region III comprises Delaware, Maryland, Pennsylvania, Virginia, West Virginia and the District of Columbia.

The region stretches from the flat, sandy beaches of Maryland, Delaware and Virginia along the Atlantic Ocean to the rugged Appalachian Mountains that wind through Pennsylvania, Virginia and West Virginia. The Allegheny Mountains and Blue Ridge Mountains divide West Virginia, Maryland and Virginia.

Major rivers are the Ohio, Delaware and Susquehanna in Pennsylvania, Delaware and Maryland and the James, Potomac and Shenandoah in Virginia and West Virginia.

The population ranges from densely urban in Washington, D.C., and Philadelphia, where the regional office is located, to sparsely rural in the hills and valleys of West Virginia. The region is rich in history, with four of the original 13 colonies and the nation's capital. The fifth state, West Virginia, traces its origins to the Civil War, when it broke from Virginia to remain in the Union.

Natural disasters most likely to affect the region are flash flooding from slow-moving summer thunderstorms, severe flooding from the remnants of hurricanes, and tornadoes. Winter storms happen on occasion – the region was part of the great snows of 1993 and 1996. Forest/wild fires are only a moderate threat.

KEY DISASTERS AND EMERGENCY ACTIVITIES 1993-2000

The 'Storm of the Century,' March 1993

	EM-3100-MD \$	8,445,720
	EM-3105-PA	23,941,846
	EM-3108-DC	494,674
	EM-3109-WV	2,428,923
	EM-3111-DE	620,926
	EM-3112-VA	5,658,502
Total		\$41,490,591 for Public Assistance

Overview

When the so-called "Storm of the Century" hit the entire Eastern Seaboard with tornadoes, high winds, and heavy snows in March 1993. The intense storm was comparable to a hurricane. It covered a huge area, with bands of precipitation that stretched hundreds of miles. Low barometric pressure, a key indicator of a hurricane, was also evident.

The regional office established regular conference calls with the states and the Response and Recovery Division director and operations chief.

"We found out the regional office did not meet the requirements we put on states. There was no backup anything. We had no emergency food and no restaurants were open in center city Philadelphia. But we learned it was possible to perform FEMA's coordination role with just a few people in the office using telephones." – Charles Lord, planning specialist, Response and Recovery Division

President Clinton declared the emergencies in every jurisdiction in Region III between March 16 and 25.

Challenges/Lessons Learned

Interregional coordination

The first challenge was geographic: all of Region III's states and the District of Columbia were under emergency declarations simultaneously. The storm impacted the entire East Coast, which affected four FEMA regions. Headquarters coordinated efforts.

Snow policy

There also was no specific snow policy, except an understanding that there was "no dough for snow." FEMA had a history of paying for damage done by ice storms, but not snow. Regular conference calls began March 19 to develop a snow policy for these disasters.

The ice storms cometh, winter 1994

	DR-1014-VA	\$21,236,531
	DR-1015-PA	80,525,059
	DR-1016-MD	11,170,108
	DR-1017-DE	6,354,982
	DR-1021-VA	5,106,980
	DR-1030-DC	2,781,003
Total		\$127,174,663 for Public Assistance and Hazard Mitigation

Overview

The winter of 1994 will be remembered for intense ice storms and subsequent flooding that hit four out of five of Region III's states. Only West Virginia did not have a disaster declaration but Virginia had two. The District of Columbia joined the list with a severe winter storm. All declarations were for Public Assistance and Hazard Mitigation

Ice hit Virginia twice. In February, Virginia was frozen by a larger storm that devastated the southeastern United States. The state suffered again in the beginning of March when a severe ice storm caused extensive loss of power and damage to forested areas.

In the first storm, trees snapped off because of thick ice. The weather warmed up, then another storm hit. Trees were then uprooted because the ground had softened.

But it was Pennsylvania, not Virginia, that had Region III's most extensive and most expensive disaster in 1994. Ice storms, sleet storms, prolonged statewide record low temperatures, heavy rains and snowfall that exceeded a 100-year-old record began on January 4 and continued throughout the month. Earthquakes occurred mid-month in Berks County.

All 67 counties were designated for aid under the disaster declaration, but the worst problems occurred in the heavily populated areas of southeastern and far southwestern Pennsylvania. Since the production of power was critical to the lives of the people, major state efforts were employed to open roads and haul needed fuel to power plants.

Weather forced schools across the state to close several multi-day periods. Federal, state and local governments, as well as business and industry, shut down for several days for public safety and energy conservation. Water mains throughout the commonwealth broke under the stress of a prolonged period of severe weather.

Pennsylvania wasn't the only state affected. A winter storm coordination conference call was conducted on Thursday, Jan. 20, 1994, at 1:30 a.m., between all Region III state emergency management directors and regional staff. The purpose was to keep the directors informed on FEMA policy regarding potential storm-related declaration requests, and to coordinate actions of mutual involvement across state lines. The coordination of actions regarding energy conservation, especially electrical power, was a key topic.

Virginia's troubles began a month later, on Feb. 8, 1994. Extreme cold, extensive icing, and continuing winter storm conditions caused massive public property damage. There were great numbers of fallen trees and downed power lines, mudslides blocking roadways throughout the affected areas, and damage to electric supply and distribution systems. The damage to the infrastructure resembled the aftermath of a hurricane.

These extreme conditions made roads very dangerous for emergency medical, fire, police, public works, and utility emergency crews, and left homeowners stranded without heat. Roads throughout the commonwealth were ice-covered, making the movement of emergency vehicles

very difficult at best. Downed power lines left over 250,000 homes and 600,000 individuals without power for periods of up to a week

The storm system affecting Virginia resulted in flooding across the southwestern section of Virginia and several inches of ice and sleet across the western, central, and eastern portions of the commonwealth. Seventy-two counties and cities were designated for disaster aid.

During the same period, Maryland experienced heavy snowfall, record low temperatures, sleet and icing conditions, and minor flooding. The heavy accumulation of ice caused trees to topple or snap - creating large amounts of debris and damage to electrical distribution systems. The loss of power necessitated the evacuation and sheltering of thousands of residents without heat and electricity during the extreme weather conditions.

Heavy ice accumulation in Delaware caused significant damage to forests, presenting long-term debris removal problems and heightening the potential of fires. Debris from fallen trees caused the closing of roads and rail lines. Record power demands caused utility companies to repeatedly interrupt service to residences and businesses. Damage to more than 1,000 utility poles and failure of transmission towers caused the loss of power to 80,000 families in sub-freezing weather.

President Clinton declared major disasters in Virginia and Pennsylvania on March 10. Maryland and Delaware were declared on March 16. Virginia's second disaster declaration was made on April 11. Washington, D.C. got its declaration on June 17.

Challenges/Lessons Learned

Salt shortage

Region III Operations staff worked with the director of the Pennsylvania Emergency Management Agency to identify potential heavy haulers to move salt from New York into eastern Pennsylvania. Coordination was effected with the Baltimore office of the U.S. Department of Transportation; U.S. General Services Administration, regional and national offices; and the Delaware State Department of Transportation. Twenty-six companies and three individuals with 20-ton or greater hauling capability were identified. Emergency, temporary authority was provided to allow transporters to bring salt to the stricken area with help from the National Guard.

Central Processing

The disaster field office in Harrisburg, Pa., became the center for all disaster project worksheet processing.

First the blizzard, then the floods: January 1996

<u>January Blizzard</u>		<u>January Flooding</u>	
DR-1080-DC	\$ 1,279,266	--	
DR-1081-MD	13,641,385	DR-1094-MD	\$ 6,648,650
DR-1082-DE	3,101,816	--	
DR-1084-WV	1,256,251	DR-1096-WV	40,835,381
DR-1085-PA	26,953,376	DR-1093-PA	160,094,357
DR-1086-VA	12,818,397	DR-1098-VA	8,737,938
Total	\$ 59,050,491	Total	\$275,366,817

Overall FEMA obligation: \$334,417,308 for Individual Assistance, Public Assistance, Hazard Mitigation

Overview

The longest disaster season in Region III history began Jan. 6-7, 1996, when the "blizzard of the century" roared through the Northeast, from the Great Lakes to the Atlantic.

The blizzard, packing winds of 35 miles an hour and sub-freezing gusts, piled up huge snowdrifts and froze highways. Cities and urban areas were paralyzed with up to two-and-a-half feet of packed snow.

Within a few days came a sudden thaw, then heavy rainstorms that dumped as much as five inches of water on already melting snow. The combination unleashed the floods of January 1996. In the Mid-Atlantic states served by FEMA Region III, the floods left more than a score dead, drove thousands from their homes and caused hundreds of millions of dollars in property damage and snow removal costs.

President Clinton signed an unprecedented 10 disaster declarations for Region III – the District of Columbia, Delaware, Maryland, Pennsylvania, Virginia and West Virginia.

Six presidential declarations were for the blizzard and authorized FEMA to reimburse county and local governments and certain nonprofit entities for up to 75 percent of the cost of emergency snow removal to open highways.

Four declarations came after the January 1996 floods and opened the way for Individual Assistance, Public Assistance (infrastructure) and the Hazard Mitigation Grant Program in Pennsylvania, Maryland, Virginia and West Virginia. These disaster declarations designated all 67 counties in Pennsylvania, 17 counties and cities in Virginia, six in northern and western Maryland, and 27 counties in West Virginia.

In Cecil County, Md., ice jams along the Susquehanna River contributed to flash floods that damaged homes, water treatment plants and utility lines. In Virginia and West Virginia, floodwaters coursed down rugged hillsides and turned placid tributaries of the Shenandoah and Potomac rivers into raging torrents.

The floods of Jan. 19 to Feb. 1 hit hardest in Pennsylvania. Thousands of miles of tributary rivers and creeks that drain into the Delaware, Susquehanna and Ohio-Allegheny-Monongahela watersheds overflowed their banks. Packed ice choked some streams and smashed bridges and rail lines in their path. At the state capital, Harrisburg, the Susquehanna River rose six to eight feet in an hour. Upstream, 100,000 people in the Wilkes-Barre area were evacuated from their homes. And that wouldn't be the end. Before 1996 was over, Pennsylvania would have four additional presidential disaster declarations.

Other states in Region III suffered multiple disasters, too. All but Delaware and the District of Columbia would feel the effects of Hurricane Fran in September. West Virginia would add two more disasters, bringing the year's total to 19 declarations.

Challenges/Lessons Learned

Multiple disasters

Once again, all of Region III was under multiple disaster declarations in multiple states. The disasters of 1996 proved that the same federal coordinating officer, FEMA staff and disaster field office in one state could handle all declarations concurrently. With solid management to ensure that personnel were taking appropriate breaks and that good working conditions existed, this

approach proved to be effective and successful, with consistency in operations and cost savings in terms of logistics.

Multi-state central processing

The regional office in Philadelphia became the site of a central processing office “to support infrastructure support field operations for nine major disasters declared in Region III during the month of January 1996.

Definitions

The original declaration for DR-1093-PA was for a flooding incident. The incident type later was expanded to include “severe storms.” The Virginia National Processing Service Center, however, had been interpreting the term “severe storms” to also include “ice and snow.” The difference in interpretation resulted in two core programs (Disaster Housing and IFG) rendering eligibility determination based on different and often conflicting criteria.

Pennsylvania vs. FEMA: Six rounds in 1996

The series of major disasters in Region III – six in Pennsylvania, five in West Virginia, and one each in Delaware, Maryland and the District of Columbia, garnered high visibility nationwide in 1996, a presidential election year. The magnitude of the flooding prompted a special White House briefing.

Pennsylvania was a special case. Aside from emergency snow removal declarations, the state hadn’t had a major disaster since May 31, 1985, when 41 tornadoes in 11 tornado clusters ripped a 700-mile path through 13 northwestern and north-central counties. Sixty-five people were killed and more than 1,000 injured.

Initial damage assessments reported nearly 8,000 homes destroyed or with major damage, more than 16,000 homes with minor damage and 18,000 homes affected by flooding. Roads, highways, bridges and water/sewer systems had widespread damage. The Peach Bottom nuclear power plant declared an “unusual event” as a precautionary measure due to the high water level of the Susquehanna River. The commonwealth reported 20 flood-related deaths.

On January 20, 1996, Gov. Ridge requested that the original disaster declaration for snow on Jan. 13 (DR-1085-PA) be adjusted to include the flood rather than seeking a second presidential declaration.

The president instead declared DR-1093-PA, to provide direct federal assistance for the first 72 hours at 100 percent federal funding for emergency and life-saving measures. Counties were to be designated for specific types of assistance at a later date.

The disaster began on a very confrontational basis with the governor who was vocally and publicly critical of FEMA.

Through consistent efforts to build positive press and community relations, FEMA staff made the public – and ultimately the governor – aware that the agency was, in fact, performing very well in addressing needs of disaster victims.

Fran’s fury follows floods, September 1996

DR-1135-VA	\$28,104,508
DR-1137-WV	16,454,407
DR-1138-PA	9,011,682

Total: \$56,659,770 for Individual Assistance, Public Assistance, Hazard Mitigation
Overview

A wet year was to get even wetter when Hurricane Fran arrived at the start of September 1996. Fran landed in North Carolina as a Category 3 hurricane and lingered long enough as a Tropical Storm to bring high amounts of rainfall and more flooding to Virginia, West Virginia, Pennsylvania and Maryland.

President Clinton's disaster declaration for Virginia came on Sept. 6. Coverage was for damages related to high winds, tornadoes, wind-driven rain, and river flash flooding.

Virginia reported 11 disaster-related deaths and 189 homes destroyed. More than 1,500 homes suffered major damage, 5,600 had minor damage and 6,450 were evaluated as affected, but habitable.

Remnants of Hurricane Fran caused heavy rains, high winds, flooding and landslides in West Virginia, enough for the president on Sept. 11 to declare 10 counties eligible for Individual Assistance and eight counties eligible for Public Assistance. Two deaths were reported.

For its fifth disaster of the year, Pennsylvania opened a second disaster field office. The office in Lewistown was to serve Huntingdon, Juniata, Mifflin, Montgomery and Perry counties.

Cumberland County was declared for Individual Assistance only. By this time, what was left of Tropical Depression Fran caused flooding and prompted a Sept. 13 major disaster declaration.

In Maryland, river and flash flooding resulted in 14 destroyed housing units and 19 with major damage in Allegany County and 25 housing units with major damage in Frederick County. More than 425 housing units received minor damage. Garrett County was also eligible for Public Assistance under a disaster declaration Sept. 17.

Challenges/Lessons Learned

In South Boston, Va., a new and media-savvy town manager took remarks from Sen. John Warner (R-Va.) and FEMA Director James Lee Witt literally, insisting they promised to rebuild the city's deteriorating infrastructure after flooding from Hurricane Fran in September 1996. Deferred maintenance and flood damage from a storm before Fran were denied. The manager's paraphrased response: Nobody mentioned regulations.

Vilification. In Madison County, Va., Charles Slate, an anti-government retiree, started a FEMA vilification program after Hurricane Fran. His public diatribe included an inflammatory video for local cable public access in which he described neighbors discussing the use of firearms against FEMA officials. His column in a local weekly newspaper continued the vitriol. Slate's comments appeared to stem from FEMA's failure to make his neighborhood whole after the September 1996 flooding.

Staff shortages

By May, Region III had enough activity to send letters to state emergency management agencies soliciting personnel to help out in other states.

Despair

Community Relations field personnel working in Pendleton County, W. Va. found residents in despair over repeated flooding. The disaster declaration for Hurricane Fran was the state's fifth declaration of the year. Other issues facing residents were loss of agricultural crops and an

accompanying loss of income; washed-out private roads and bridges; debris accumulation in streams; and problems with potable water.

Group Flood Insurance

For the first time, the Individual and Family Grant Program bought flood insurance for qualified applicants living in Special Flood Hazard Areas.

Repair/replacement of privately owned roads and bridges

West Virginia has a great number of private roads and bridges. They are difficult to locate on deeds and they usually serve several families, often without formal agreements. Repair funds are difficult to assign without formal documentation. Consequently, the resolution process becomes a complex problem.

Stream cleaning

In West Virginia, an above-average percentage of unhappy residents felt that "the government" had let them down by not addressing the issue of clogged rivers, streams, and creeks.

Hurricane Bonnie targets Tidewater, August 1998

DR-1242-VA \$11,200,030 for Individual Assistance, Public Assistance and Hazard Mitigation

Overview

North Carolina in FEMA Region IV and Virginia in Region III felt the brunt of Hurricane Bonnie in late August 1998.

The Category 3 hurricane's winds and flooding did extensive damage to infrastructure in the Virginia Tidewater cities of Chesapeake, Norfolk, Portsmouth, Suffolk and Virginia Beach. A Sept. 4 disaster declaration allowed federal disaster aid through Individual Assistance, Public (infrastructure) Assistance and Hazard Mitigation programs.

Hurricane Floyd floods four states, September 1999

DR-1293-VA	\$ 39,777,311
DR-1294-PA	39,599,077 (includes supplement allocation for buyouts)
DR-1297-DE	7,454,816
DR-1303-MD	7,890,832

Hurricane Floyd, a huge Category 3 storm when it made landfall between Cape Fear and Wilmington, N.C., moved into Region III when it tracked across the southeastern portion of Virginia as a Category 1 hurricane during the morning and early afternoon hours on Sept. 16, 1999.

The system caused significant rainfall, exceeding 15 inches in some areas, which led to widespread flooding and major disaster declarations in four Region III states – Virginia, Pennsylvania, Delaware and Maryland.

Floyd was atypical. It triggered flooding in mostly inland areas that normally wouldn't expect to feel the full effects of a hurricane. The National Weather Service describes it as "the deadliest

storm to hit U.S. shores in more than 25 years.” The hurricane claimed 56 lives and left damages estimated at more than \$6 billion from the Carolinas to New England.

Virginia

The city of Franklin experienced the worst flooding in its history. Floodwaters destroyed 182 downtown businesses, 300 residences and forced the emergency operations center to relocate out of the flooded area. Flooding also disrupted the telecommunications system serving Franklin and surrounding communities.

On Sept. 16, an emergency declaration under the Stafford Act provided the commonwealth with federal assistance for debris removal and emergency protective measures. President Clinton declared a major disaster on Sept. 18 to provide Individual Assistance and Public Assistance to the cities of Franklin, Hampton, Portsmouth, Newport News, Norfolk and Virginia Beach; and the counties of James City, Isle of Wight and Southampton. Before the recovery effort was over, 48 Virginia jurisdictions were eligible for Individual Assistance, Public Assistance, or both, with Hazard Mitigation authorized statewide.

At the height of the storm, 180,000 customers were without power and almost 1,800 were sheltered. The Portsmouth water system outage affected 120,000 individuals in Portsmouth, Suffolk and Chesapeake. Reports indicated more than 1,900 damaged individual residences.

Pennsylvania

Pennsylvania's Hurricane Floyd disaster declaration came on the same day as Virginia's. It provided for Public Assistance, Individual Assistance and Hazard Mitigation for Bucks, Chester, Delaware, Lancaster, Montgomery, Philadelphia and York counties in the southeastern part of the state. Berks County would later get Individual Assistance only.

Pennsylvania already had an open disaster (DR-1289-PA) for August flooding in McKean and Juniata counties and would add another on Sept. 22 for damage done by Tropical Storm Dennis over Labor Day weekend.

Delaware

Hurricane Floyd brought a record 10 inches of rainfall to Delaware, resulting in flooding damage in New Castle County, and the state's first major disaster declaration for Individual Assistance. Six prior presidential disaster declarations in the state were for infrastructure repairs and recovery costs

Floyd did the most damage along the valleys of the Red Clay, White Clay and Brandywine Creeks, and the Christina River. In Glendale, the foundation walls of a seven-unit townhouse were blown out, making it uninhabitable. Fourteen homes were reported destroyed, 188 had major damage and another 275 homes had minimal damage. The historic Wilmington and Western Railroad suffered damage to three trestles.

Maryland

Maryland was the last of Region III's states to get a major disaster declaration for Hurricane Floyd. It came on Sept. 24, making 11 counties eligible for Individual Assistance, 10 counties eligible for Public Assistance programs and Hazard Mitigation statewide.

Challenges/Lessons Learned

Concurrent multiple disasters

With three declarations in Pennsylvania, two in Virginia and Floyd disasters in Delaware and Maryland, Region III needed outside help. Region VII took over recovery operations in Maryland and Region I helped staff the Delaware disaster field office.

Weather complications

Just over a week before, Tropical Storm Dennis rainfall was already causing ground-saturation problems in Virginia, where it was accompanied by a tornado in Hampton and prompted a declaration for Individual Assistance.

Temporary housing needs

Region III set up its first mobile home park since 1985 in Southampton County, Va. One year after the hurricane hit, 55 families were still living in FEMA temporary housing.

NEMIS

Pennsylvania's first disaster of 1999 was the region's first disaster to be processed solely on the new National Emergency Management Information System (NEMIS) software.

Mosquitoes

The Virginia disaster field office took 1,100 calls on its "mosquito hotline." FEMA funded a \$500,000 mission assignment to the Department of Defense grant for aerial spraying to combat the threat of mosquito-transmitted diseases. More than 646,000 acres were sprayed.

Different rules

Congress allocated \$215 million to buy out homeowners whose property was substantially damaged. The difference in eligibility requirements between this allocation and the FEMA Hazard Mitigation Grant Program caused confusion and delays.

Rapid Needs Assessment

The importance of aerial surveys of widespread disaster areas was brought home with flooding in Franklin, Va., as "a city in a lake." Since Floyd, Region III has developed comprehensive maps to identify critical facilities by longitude and latitude in the hurricane-prone coastal states – Delaware, Maryland and Virginia.

Buyout requirements

Some states had problems meeting the stringent criteria for buyouts of "substantially damaged" homes, as authorized and funded by Congress. Pennsylvania could have used more of the supplemental funds for acquisition projects.

REGIONAL INNOVATIONS

Region III has contributed to improving emergency management and recovery operations at FEMA. The following are key accomplishments in the areas of damage prevention, reinvention, partnership, customer service and rapid response.

Damage Prevention: Advances in Mitigation

Mitigation efforts in Region III are promoted by a consistent news-generating campaign for significant acquisition and elevation projects.

The nationwide initiative *Project Impact: Building Disaster Resistant Communities* continues to expand in Region III.

GPS targeting enhances HMGP identification

The combination of events and the immediate need for relief for great numbers of victims caused mitigation program administrators to rethink their methods and develop new approaches to speed assistance. Region III, at that point assigned the administration of FEMA's response in Illinois, soon discovered that an early impediment to progress was the time-consuming practice of identifying and locating the hardest-hit victims.

The technique employed until that time was to assemble a team of interagency experts to tour the affected areas, then exhaustively discuss the most appropriate actions to take using available funding for the greatest impact. In the meantime, people remained homeless or, worse yet, started rebuilding without taking actions to prevent future damage.

While satisfying the requirement to activate the interagency team, Region III experimented with a new approach, which later became known as "targeting." It was recognized early that the team approach could quickly lose its effectiveness due to redundant conclusions, such as, "The best way to avoid flood damage is to get out of the floodplain." Faced with the task of locating the hardest-hit victims along an 860-mile reach of the Mississippi River and its tributaries, Region III searched for and found a high-tech approach, which proved expedient.

The experiment used Global Positioning System (GPS) technology, to pinpoint the location of damaged areas. Later, this data was transferred to a computerized Geographic Information System where the information could be developed and used as a management tool. The Region III experiment collected data from the air and from the ground, using highly mobile teams to determine which approach was better.

The airborne data collection team used specially outfitted Blackhawk helicopters to quickly traverse the affected areas, plot flood inundation lines, and collect specific data on the exact location of submerged and affected structures. The process was quick and could survey areas still under water, but it was also extremely costly and limited data collection to that which could be viewed from above.

The mobile ground teams, on the other hand, were slower and had to wait for floodwaters to recede. But once data collection was possible, those teams were able to assemble data quickly and cheaply, using GPS technology, digital photographs of each property, a rudimentary construction analysis, and a more accurate assessment of substantial damage specific to each location.

The experiment was successful and provided the technological base for all targeting activities in future disasters in Region III. In fact, further refinements led to a three-tiered approach utilizing the highly mobile ground-based data collection teams to narrow the field of properties that would ultimately be examined, further improving efficiency.

Then, on a second run-through, the teams map and photograph structural damage within the hot spots. Finally, the owners of the most damaged properties are approached to determine their desire to be bought out, relocated, or elevated. If they wish to participate in a project, the team will immediately survey and record information about each property to support the cost-effectiveness and environmental reviews that will follow.

Region III uses this approach to identify 200 to 300 percent of the structures that potentially qualify for a mitigation grant from each disaster. Given people's tendency to change their minds about participation, this provides the state with ample opportunities for substitution later. Properties not reached by available grant monies are held in reserve for inclusion in future disaster projects or for assistance from any source that may develop.

Mitigation awareness: 'Sold on Flood Safety'

Region III recognizes the importance of breaking the damage-repair-damage cycle through mitigation efforts on all levels. The first step is making people aware of what they can do to make their homes and communities safer from future disasters.

The region has been successful in promoting the Hazard Mitigation Grant Program through a series of public ceremonies to salute projects that move people out of the floodplain and out of harm's way.

A visual feature of each program is the unveiling of a real estate-type "for sale" sign, proclaiming "a community SOLD on Flood Safety." Local, state and Congressional officials participate in a ceremony and usually take the lead in calling the media.

"Thank the Lord for the help that FEMA gave us." – Linda Jackson, one of 56 homeowners in Glasgow, Rockbridge County, Va., honored at the initial ceremony in June 1997.

The town sits at the junction of the James and Maury rivers and has been hit by six major floods since 1969. Ms. Jackson's home had flooded four times in the 19 years she lived there. Her home was designated the first one to be relocated by the project.

The Glasgow ceremony marked the release of federal funds to the commonwealth of Virginia and the town of Glasgow for a \$2 million project to acquire and demolish seven homes, elevate 14 homes above flood level, and relocate 35 others out of the floodplain. The federal share was \$1,504,079, including a supplemental grant of \$112,999.

A second ceremony in Glasgow in May 1999 heralded a Hazard Mitigation Grant Program project announced two years earlier. This time, Glasgow was recognized as a "sustainable community" and a partner in the National Town Meeting for a Sustainable America.

Other HMGP ceremonies with local, state and congressional officials have been held in all five states in Region III. They represent significant acquisition, relocation, and elevation projects Region III has approved under the Hazard Mitigation Grant Program. The other ceremonies were:

- Locust Grove, Allegany County, Md.: August 1997
- Hunlock and Plains Townships, Luzerne County, Pa.: October 1997
- Abington Township, Montgomery County, Pennsylvania: November 1997
- Phillipi, Barbour County, West Virginia: November 1997
- Plains Township, Luzerne County, Pennsylvania: February 1998
- Summerville Borough, Jefferson County, Pennsylvania: March 1998
- Elkins, Randolph County, W. Va.: May 1998
- Parsons, Tucker County, W. Va.: May 1998
- Phillipi and Junior, Barbour County, W. Va.: August 1998
- Keyser, Mineral County, W. Va.: October 1998
- Morgan County and Sportsman's Paradise, Berkeley County, W. Va.: December 1998
- Georges Creek, Allegany County, Md.: April 1999

- Lewes, Sussex County, Del.: May 1999
- Waynesboro, County, Va.: May 1999
- Jefferson County, W. Va.: July 1999
- Point of Rocks, Frederick County, Md.: September 1999
- Milton, Cabell County, W. Va.: November 1999
- Bucks County, Pa.: January 2000
- Collegeville, Montgomery County, Pa.: January 2000
- Buena Vista, Rockbridge County, Va.; May 2000

Region III *Project Impact* Communities

Region III has 16 *Project Impact* communities – three in each state plus the District of Columbia. The communities range from rural county partnerships in a mountainous terrain to cities with sandy beaches on the Atlantic Ocean and Chesapeake Bay, to the nation’s capital, where the threat of an urban fire weighs heavily.

Two of the original seven *Project Impact* pilot communities are in Region III. Allegany County, Md., and Randolph/Tucker counties in W. Va. were selected in 1997. Both are rural areas. Regions II and III share the first *Project Impact* community that crosses state and regional lines. Waverly Valley, comprised of six communities in New York and Pennsylvania, signed their agreement in May 2000 on a bridge over the Susquehanna River.

Milford, Del. originated a Boy Scout *Project Impact* merit badge. Region III Natural Hazards Branch Chief taught boys in Troop 911 about land “survey” techniques to assist the scouts with mitigation methodologies.

Lycoming County, Pa. attracted a great deal of attention when a Hazard Mitigation Grant Program project moved an historic church out of harm’s way.

In 1999, Randolph and Tucker counties in West Virginia became the first *Project Impact* community to join the Department of Energy’s Rebuild America Program.

Region III’s *Project Impact* communities are:

Delaware

City of Lewes (1998)
 City of Milford (1999)
 Town of Bethany Beach (2000)

Washington, D.C.

District of Columbia (1998)

Maryland

Allegany County (1997)
 Prince George’s County (2000)

Pennsylvania

Lycoming County (1998)
 Union Township (1999)
 Luzerne County Flood Protection Authority/Mitigation Advisory Board (2000)

Virginia

Roanoke Valley-Alleghany Regional Commission (1998)

Virginia Beach (1999)

City of Chesapeake (2000)

West Virginia

Tucker and Randolph Counties (1997)

Cabell County (1999)

Barbour County (2000)

Reinvention

Regional Response Plan: Comprehensive, flexible

Region III's 1992 Regional Response Plan started with pre-event requirements and developed procedures for operations and information processing for all functions. It is based on a "one-approach concept" that works regardless of how small or how large a disaster.

The response plan was first tested out of region, when Region III provided Operations and Information and Planning staff in Kansas and ran the Illinois recovery effort after the 1993 Midwest floods. The plan worked.

Region III was one of the first to develop a complete set of procedural documents (Operations, Information and Planning, Declaration Processing, Preliminary Damage Assessment Coordination, Alert and Notification and Monitoring) as part of its regional response plan. Many were incorporated in national documents.

Operations supplements are produced as needed for special events. For 2000, that meant manuals for OpSail in Virginia Beach, Baltimore and Philadelphia, and the Republican National Convention in Philadelphia.

The plan was reviewed and revised for a second time in July 2000, as a complement to the 1999 update of the Federal Response Plan. The regional plan is intended for use by regional personnel in federal agencies to plan for, and respond to, any emergency that requires a significant federal presence.

Region III had the cooperation of federal and state partners on the Regional Interagency Steering Committee in developing a document that assures quick and effective response during a variety of natural and technological disasters.

Faster, more effective REP exercise evaluations

FEMA established the radiological emergency preparedness (REP) program to (1) ensure that the public health and safety of citizens living around commercial nuclear power plants would be adequately protected in the event of a nuclear power station accident and (2) inform and educate the public about radiological emergency preparedness. FEMA's REP program responsibilities encompass only offsite activities - state and local government emergency preparedness activities that take place beyond the nuclear power plant boundaries. Onsite activities continue to be the responsibility of the NRC.

Region III Training, Exercises and Evaluation branch staff does REP exercise evaluation reports in a way that has become a model for the country.

Before each exercise, a document is prepared that includes all issues from previous exercises that need to be resolved. During the exercise, evaluators' comments are incorporated into the report.

At the post-exercise critique FEMA Region III is able to deliver the draft report to the state for comments.

This process allows FEMA to inform the state within days of serious issues in emergency response revealed by a REP exercise. The new process has improved the relationship between FEMA and the state, the utility, and the Regional Assistance Committee.

FEMA Region III now delivers final assessment reports within 50 days of an exercise (sooner than the 90-day time limit).

Assessment of radiological emergency preparedness is vital in Region III, which reports on nine nuclear power plants. Under a new reorganization, a pilot test of concepts will be conducted in fall 2000 at the Susquehanna Nuclear Power Station in Berwick, Pa. More responsibilities for preparedness are being assigned to the state, shifting away from objective-based methodology in evaluations to outcome-based methodology.

Partnerships

Professionals working together to get the job done

Region III has strong professional relationships with its states and the federal agencies that have roles within the Regional Response Plan.

The Regional Interagency Steering Committee (RISC) – an active, expanded group, meets two to four times a year, depending on requirements. In 1993 and 1997 Region III was responsible for emergency planning for the presidential inaugurations in Washington, D.C. It will happen again in 2001.

The year 2000 was especially busy, with many special events in Region III, including the Millennium Celebration in Washington, D.C.; Operation Sail (OpSail) 2000/International Naval Review activities in Hampton Roads, Va., Baltimore and Philadelphia; the National Governors' Conference in State College, Pa.; and the Republican National Convention in Philadelphia.

Customer Service

Community Relations: A hallmark of Region III

Community Relations disaster reservist at the time an agreement was signed. Community Relations representatives had been part of preliminary damage assessment teams. Now they were forging new territory in helping Public Assistance with infrastructure applicants.

Community Relations support includes educating applicants, monitoring the relationship with FEMA and providing feedback to Public Assistance.

The partnership was first dispatched to West Virginia to assist with Public Assistance applicants. In a letter to Regional Director Rita A. Calvin, Carl L. Bradford, director of West Virginia's office of emergency services, lauded Region III Public Assistance and Community Relations staffs. He called the community relations team "very instrumental in assisting" his office with applicant closeout.

Rapid Response

Rapid Needs Assessment team stands alone

Region III was the first region to develop a Rapid Needs Assessment team as a stand-alone capability. This team of federal agency experts can go in after an event to assess needed emergency life-saving activities.

The regional Rapid Needs Assessment team was formed at the same time national Rapid Needs Assessment teams were formed. Region III's team was the equivalent of three national teams. The national teams have since been disbanded. The team has trained each year since 1996. In fall 2000, training for the regional team encompassed 65 federal and state participants.

As part of its rapid needs assessment planning, Region III created maps showing critical needs facilities to facilitate field assessment after a catastrophic event. These maps include toxic release inventory, Environmental Protection Agency Super Fund sites, schools, churches, nuclear power plants, airports, bridges, dams, and water supply/treatment sites.

REGION IV

INTRODUCTION

One of every four disasters in the United States occurs in Region IV, which consists of the eight states on the nation's southeastern corner: Kentucky, Tennessee, North and South Carolina, Georgia, Alabama, Mississippi and Florida. Since Hurricane Andrew in 1992, Region IV has responded to 86 major disaster declarations, nearly twice as many as the next busiest region. Region IV stretches almost 1,300 miles from north to south and more than 900 miles east to west and is the annual target of an almost predictable series of violent weather events.

Between June and November a parade of tropical storms born off the African continent gather strength from the warm waters of the Atlantic Ocean and move westward toward the United States, becoming potentially dangerous hurricanes aimed at Region IV.

Kentucky, Tennessee, Mississippi, Georgia and Alabama are frequent victims of spring tornadoes spawned in an unstable mix of warm and cold air. Florida, in addition to hurricanes, suffers wildfires during periods of drought. Even earthquakes are not out of the disaster picture in Region IV. A western corner of the region lies in the New Madrid earthquake zone.

A single disaster, Hurricane Andrew, resulted in economic losses exceeding \$20 billion.

Hurricane Floyd cost the government \$1.2 billion in federal assistance to North Carolina alone.

Potential man-made disasters were also the region's responsibility.

Region IV was assigned to provide assistance to NASA in the event of off-site radiation contamination in the 1997 launch of the Cassini project, a scientific satellite laden with potentially dangerous radioactive isotopes. The region also was tasked to manage any major emergency arising out of the 1996 summer Olympics in Atlanta.

The importance of the region's work and the severity of its disasters have been sufficient to warrant half a dozen visits by President Clinton and Vice President Gore, and many more by FEMA director James Lee Witt, to give support to disaster victims, attend conferences or launch new initiatives.

Director Witt convened a 1997 hazard mitigation summit in North Carolina and a tornado summit in Atlanta to discuss ways to protect lives and property. He also organized an emergency planning meeting prior to the summer Olympics and attended a series of ceremonies designating disaster resistant communities under *Project Impact*.

Many of the region's technical and organizational innovations have been adopted nationally for the improvements they brought to disaster response and recovery operations.

KEY DISASTERS AND EMERGENCY ACTIVITIES

TROPICAL STORM ALBERTO – A DECEPTIVE DELUGE

In late June 1994, as summer approached its midpoint, most residents of Georgia, Florida and Alabama had the Fourth of July holiday in mind and barely noticed weather advisories about the season's first tropical storm forming in the lower Gulf of Mexico. A tropical storm is not as bad as a hurricane, they may have thought.

But what was expected to be little more than a period of high winds and rain became a monster storm that drenched three states and become the worst disaster in Georgia history. The unrelenting heavy rains lasted three weeks. In 12 Florida counties Alberto caused \$31.7 million in flood damage. Losses in southeast Alabama totaled \$23.8 million and Georgia, the worst hit of all, sustained damage totaling a staggering \$543 million.

Georgia clearly was Alberto's greatest victim. In some areas near Macon and Albany, 25 inches of rain fell in 24 hours as an interlocking grid of atmospheric pressure fronts stalled for 22 days, spawning tornadoes and deadly flooding. As a direct result of Alberto's floods, 34 Georgians were killed and countless others injured. Fifty-five counties, one third of the state, received disaster assistance. Public infrastructure losses exceeded \$301 million.

STORM OF THE CENTURY – MARCH 1993

Termed the "Storm of the Century," this winter weather system affected 26 states and about 50 per cent of the nation's population. While not a hurricane, it was the equal of a Category 3 hurricane, based on storm surge and plunging barometric pressure. It developed over the Gulf of Mexico, intensified into a major storm and paralyzed the entire eastern seaboard. Snowfall rates of 2-3 inches per hour were common. The storm brought hurricane-force winds and record snowfall, knocked down power lines and caused coastal flooding. Many roads were impassable, some for as long as two weeks. In Florida, the storm behaved like a hurricane, causing severe coastal and inland flooding in 38 counties.

There were 114 fatalities attributed to the storm. Thousands of people were isolated by the record snowfalls in Georgia and North Carolina. Over 200 hikers were rescued from the mountains of North Carolina and Tennessee. Interstate highways were closed from Atlanta northward. Over 3 million customers were temporarily without electric power.

Mitigation Projects:

Among the 19 mitigation projects approved in Region IV following the winter storm were installation of a satellite warning system to connect several counties with the state emergency operations center, relocation of a flood-prone bridge, elevation of generators and storm shutter retrofitting.

PALM SUNDAY TORNADOES – MARCH 1994

A series of severe storms moved through Alabama and Georgia on March 27, 1994, causing loss of life and extensive damage to public and private property. The severe weather resulted in 19 deaths and more than 200 injuries and caused an estimated \$67.5 million in damages to homes businesses, public facilities, and the agricultural community.

HURRICANE OPAL – OCTOBER 1995

A Category 3 hurricane, Opal made landfall in the Florida panhandle along the Okaloosa-Santa Rosa county line on Oct. 4, 1995, with maximum sustained winds of 125 miles per hour. Coastal flooding occurred from Gulf Shores, Ala., to Tampa. Hurricane force winds swept portions of Florida, Alabama and Georgia and winds of tropical storm strength swept as far north as western North Carolina and eastern Tennessee.

Opal's total damage was estimated at \$3 billion, making it the third most costly hurricane to strike the U.S. Fourteen counties in Florida, 49 in Georgia and 38 in Alabama were declared eligible for disaster aid. Over 100,000 people were evacuated before the storm made landfall and about 40,000 were housed temporarily in Red Cross shelters. Approximately 3,300 structures were destroyed and over 18,000 were damaged.

Mitigation Projects:

There were 132 mitigation projects submitted to FEMA following Hurricane Opal and \$20 million was obligated for Florida, \$6.6 million for Alabama and \$2.3 million for Georgia. Among the projects funded after Opal were: development of a county storm mitigation strategy, wind-proof shutters for the Parker City Hall in Bay County (Fla.), and digital mapping computer equipment for Wakulla County (Fla.), storm-water drainage improvements, purchase of weather-warning radios and installation of underground utilities.

1996 OLYMPICS GENERATES MEDALS FOR REGION IV

While Region IV did not have a single entrant in the 1996 Summer Olympics in Atlanta, the region's close involvement in security planning considerations resulted in first-place laurels of equally significant stature – including one from Vice President Al Gore.

Also, out of the region's work connected with the athletic event emerged:

A plan for improving efficiency and reducing chances of work interruption of headquarters staff through distance computing technology;

A valuable, real working partnership with representatives of other federal and state agencies through the Regional Interagency Steering Committee (RISC).

Through RISC, the Region IV Response and Recovery division provided staff who coordinated special plans for emergencies that might arise out of the Olympics. The resultant Olympic coordinating committee developed plans for continuity of operations, training and exercise, and establishment of an alternate regional operations center in an adjoining county so that staff could continue to function even if an emergency closed the city's transportation system and streets.

The Hammer Award

The Olympic Centennial Park bombing incident proved the value of the plans as response actions were actually tested.

Deder Lane, a FEMA Region IV employee, was coordinator for the interagency steering committee. The committee met many times during the year before the Olympics, he said, and the sharing of information among representatives of the various state and federal agencies proved important.

Vice President Gore presented the regional interagency steering committee with the prestigious "Hammer Award" for support of the Summer Olympics in Atlanta. The award is a hammer mounted and framed, with the inscription, "Thanks for building a government that works better and saves more."

Teleworking For Uninterrupted Efficiency

The 1996 Olympics also posed potential problems for communication, transportation or civil disruptions. These threats propelled Region IV into the leadership role of developing a system to enable FEMA employees to perform normal duties at remote locations.

As a result of those efforts, all of FEMA was scheduled in 2000 to begin a full year of testing a distance computer operating system known as teleworking, or telecommuting. For FEMA, telework is an arrangement that permits employees to work at alternate work sites such as their home, satellite locations or other federal or FEMA offices.

Development of such a system began when Atlanta, site of the Region IV office, was chosen as the Olympics site. It was not long before planners identified the critical traffic congestion potential that would be caused by enormous Olympics crowds. A serious problem was seen for employees driving to their jobs in the old Region IV headquarters not far from downtown Atlanta. And that problem would occur because of traffic congestion for normal Olympics conditions. If a bombing or other disruption were to occur, the situation could quickly turn heavily congested streets into parking lots.

So, a Region IV group developed plans to permit advance emergency response team members and other employees to work at an alternate regional operations center in a nearby county. Some employees were permitted to connect their computers and work from their homes. Nearly half of Region IV headquarters staff participated as preparatory exercises were held.

An after action report of the telework system concluded that the idea worked and would be feasible for use throughout the agency. In further tests, Regions I and IV, FEMA headquarters and the Mt. Weather, Va., emergency assistance center concluded that the program would work for the entire agency. A one-year agency-wide trial of the program was scheduled for 2000-2001.

HURRICANE FRAN – SEPTEMBER 1996

Hurricane Fran slammed into North Carolina's southern coast Sept. 5, 1996, with sustained winds of approximately 115 mph and gusts as high as 125 mph. There were 24 fatalities in North Carolina and 1.7 million utility customers lost electricity. Flooding was a severe problem as Fran produced over 10 inches of rain in parts of eastern North Carolina and western Virginia. Damages to homes and businesses in North Carolina were estimated at approximately \$2.3 billion. Damage to public property was set at \$1.1 billion. Agricultural damage (crops, livestock, buildings) was over \$700 million. Wake County (Raleigh and vicinity) alone reported over \$900 million in damage to residential and commercial property. Finally, forestry/timber losses for the state probably exceeded \$1 billion

Mitigation Strategies - Following hurricanes Bertha and Fran, future development on Topsail Island was required to comply with land use planning techniques. Reconstruction of substantially damaged seawalls, revetments, groins or jetties was allowed in order to facilitate the natural movement of sand.

Mitigation Opportunities – In coastal areas where base flood elevations are not provided, local officials are amending flood ordinances to require that structures be elevated above the highest flood of record. Local governments determined flood elevations for Hurricane Fran, and if no other data was available, used this for enforcement purposes. Structures that experienced repetitive flooding have been considered for elevation to reduce the likelihood of future damage. The state is also examining dams to determine their vulnerability to future storms.

Mitigation Projects -More than 1,000 families damaged by Hurricane Fran have been assisted in moving out of harm's way by FEMA hazard mitigation grants. Within a year of the storm, projects were underway to purchase 524 primary residences, including 104 mobile homes, and 54 vacant lots in the floodplain, and to elevate 560 homes above the 100-year flood level. Most of the properties had suffered repeated flood damage. A total of 129 mitigation projects were submitted to FEMA following the storm. As of March 2000, \$80.3 million was obligated for North Carolina and \$688,251 was obligated for South Carolina.

THE FLORIDA WILDFIRES – THE DISASTER THAT WOULDN'T QUIT

A prolonged spring drought that left most of north Florida literally as dry as the Arizona desert provided fuel for a series of wildfires that raced through 40 counties between May and July of 1998.

The fires were stubborn, dangerous and fast moving. Unusually high winds fanned the flames and continually re-ignited areas that had been extinguished. This created a serious burden on overworked firefighters and caused FEMA to make a rare request to the Department of Defense for additional manpower. Hundreds of troops were given on-site training in firefighting and safety and deployed with the tools of the trade.

FEMA issued a series of fire suppression grants to help fire departments buy essential equipment and pay personnel called in from other states to work the emergency. A major disaster declaration was issued for individual assistance to displaced residents. Disaster unemployment compensation was made available to victims who lost their source of income because of the fires.

DEADLY 1998 SPRING TORNADOES

Killer tornadoes roared through more than 50 counties in six southeastern states of Region IV in the spring of 1998, leaving a grim wake of twisted destruction, more than 100 dead, 1,000 injured and federal and state disasters costing more than \$179 million. Within a tumultuous 60-day span, President Clinton responded to requests by governors of Alabama, Florida, Georgia, Kentucky, North Carolina and Tennessee for help in recovering from one of nature's most violent spring rampages.

In Alabama and Florida alone, 76 persons were killed and 1,000 injured when tornadoes ripped through the Birmingham, Tuscaloosa and Orlando areas. The devastating twisters, including a rare 300-mile-an-hour Force 5 tornado in Alabama, left losses in the many millions of dollars.

Mitigation Strategies

FEMA awarded more than \$82 million in hazard mitigation grants for regional projects designed to lessen the impact of future disasters. FEMA became a major partner with Florida, providing \$3.5 million of \$4.7 million needed to launch the Florida Warning and Information Network. This network will reach 97 percent of the state's population within 15 minutes of a weather

incident. FEMA also has promoted construction of Safe Rooms, tornado shelters in mobile home parks and community-based plans for dealing with severe weather. A Safe Room plan calls for a single room in a structure - typically a centrally located bathroom or closet - to be shored up to withstand windstorm damage.

HURRICANE GEORGES - 1998

A powerful Category 3 hurricane with winds up to 130 miles an hour, Georges raked Puerto Rico and the U.S. Virgin Islands before taking aim at the mainland, where it would pay a destructive visit to three states and trigger as many presidential disaster declarations. Gaining strength over warm tropical waters as it moved westward from the islands, the storm roared across the Florida Keys on Sept. 25, 1998, then turned north, making a second landfall on the Florida Panhandle and dumping torrents of rain on Alabama and Mississippi.

The affected states experienced widespread flooding, damaged public infrastructure and a landscape littered with wind-blown debris. Thousands of residents were forced to flee their homes and businesses. President Clinton declared the states and the island territories major disasters. FEMA would spend more than \$1.53 billion on relief operations for Hurricane Georges.

In the three southeastern states alone the federal government spent \$368 million on emergency housing, family grants and infrastructure repair and on loans from the U.S. Small Business Administration to help victims recover from their economic losses.

Alabama sustained damage in 16 counties and received \$83 million in total assistance. Florida suffered damage in 19 counties from the Keys to the Panhandle, and received \$154 million in total assistance. Hard-hit Monroe County, the nation's southernmost, received \$108 million of the hurricane relief approved for the entire state. Seventeen Mississippi counties suffered damage and federal assistance topped \$131 million.

Mitigation Projects:

There were a total of 76 projects submitted to FEMA following the storm. The projects included street drainage improvements in Port St. Joe, Fla.; storm shutter installation on pump and power stations in Dade County, Fla.; a statewide early warning system in Alabama; and an alert system for the University of Southern Mississippi.

HURRICANE FLOYD - SEPTEMBER 1999

Hurricane Floyd brought flooding, rains, high winds and rough seas to the Atlantic seaboard from Sept. 14 - 18, 1999. The greatest damage was to the eastern Carolinas, New Jersey and areas along the coast as far north as Maine. Disasters were declared in several states as flooding caused severe problems across the region. Damage was estimated at \$1.6 billion in Pitt County, N. C., alone, and total storm damage could surpass the \$6 billion caused by Hurricane Fran in 1996.

Although Hurricane Floyd reached Category 4 intensity in the Bahamas, it weakened to Category 2 at landfall in North Carolina. Its enormous size was a greater problem than wind speed as torrential rains covered a wider area and lasted longer than a typical hurricane. Approximately 2.6 million people evacuated their homes in Florida, Georgia, and the Carolinas—the largest evacuation in U.S. history. President Clinton declared 66 North Carolina counties a major disaster area and more than 87,000 persons sought disaster assistance.

Congress approved \$2.2 billion in aid and the North Carolina legislature approved \$836 million. In addition, FEMA spent \$1.05 billion and the Small Business Administration approved \$459 million in loans to repair homes or businesses. Some \$347 million in supplemental requests have been submitted.

Mitigation Projects:

Mitigation funds were used to buy out 3,854 North Carolina properties to prevent their being damaged in a future disaster. Once the structures have been demolished, the sites will remain in a natural state as green space. The federal share of the buyout costs totaled \$61,715,636.

REGIONAL INNOVATIONS

MITIGATION: INNOVATIONS and ACHIEVEMENTS

From 1993 to 2000, Region IV Mitigation has sought to lead the way in programmatic and technological innovations. The goal of the Mitigation division has been to broaden and strengthen the relationship with each of the eight states and local communities in the region. Region IV Mitigation is totally integrated into disaster operations beginning with pre-disaster regional operations center (ROC) operations to disaster closeout. The Region IV Mitigation division has also hosted and coordinated summits and conferences to promote mitigation, hurricane awareness and tornado safety. The goals and objectives for Region IV Mitigation have been and continue to be changing and improving the way in which it responds to disaster and building relationships that lessen the impact of disaster.

PROJECT IMPACT: Disaster Resistant Communities

Since its beginning, *Project Impact* has grown at a phenomenal rate in Region IV. *Project Impact* has become the vehicle for building partnerships with the state, the community and the private sector - helping the community to help itself. Input from Region IV consists of technical assistance, facilitation, and networking. Support is provided to each state to promote local Hazard Mitigation planning and to assist existing and future *Project Impact* communities.

Three of the seven pilot communities in the program are located in Region IV. The first was Deerfield Beach, Fla. Deerfield Beach initiated a program in which low-income senior citizens were provided protective shutters for their homes, installed by volunteers from the local Marine ROTC. The city partnered with the state and the Chamber of Commerce to implement "Operation Open for Business" to assist small businesses in preparing disaster business continuity plans and retrofitting structures for storm protection.

The State Farm Insurance Co. chose Deerfield Beach to open a "Good Neighbor House" as a consumer education center for disaster resistance and home safety. Other projects include the training of community emergency response teams, the creation of neighborhood emergency teams and the Deerfield Beach emergency education program.

Also within Region IV is Fayetteville, Tenn., which was awarded Star Community 1999 for its accomplishments.

Currently, Region IV has 29 *Project Impact* communities ranging in size from rural counties to the Tampa Bay metropolitan area. Thirteen more are in the process of setting up their programs

in 2000. There are approximately 500 participating partners and many projects underway or completed in each community.

Hazard Identification and Risk Analysis (HIRA)

The goal of the Hazard Mitigation Grant Program (HMGP) was to streamline the process by which projects were approved. First, Region IV worked to build a team approach with state HMGP staff and FEMA regional staff reviewing projects simultaneously. The timeline for project approval has shortened from months or even years to as little as 30 to 60 days. To further enhance the team approach in Region IV, in May 1998, a Memorandum of Understanding was executed between the Florida Division of Emergency Management and FEMA Region IV, naming Florida a "Pilot Management State." Florida was the first state in the nation to receive this designation. The "Management State" concept was developed as a means to expedite the grant program. Under this, states would be allowed to manage major portions of the HMGP usually handled by FEMA, theoretically eliminating bureaucratic red tape. In Florida, the pilot program has been a complete success.

The new streamlined approach to project management has created an expedited review process that allows funding obligations to be completed within 224 months of a declared disaster date. Responsibility for eligibility review is delegated to Florida, along with cost-effectiveness, environmental compliance and grants management procedures.

The state is also responsible for participating in evaluation of the pilot effort, which was completed in November 1998. It was determined that the state was complying with all the program regulations. State staff effectively conducted benefit-cost analyses, environmental reviews, eligibility determinations and grants management activities. Florida is recognized as the only state in the nation that has been delegated all programmatic review authority. Florida's approach to the management state concept has been recommended as a model for other states to use, especially for environmental compliance initiatives and pilot evaluation format.

In order to standardize the application process, Region IV developed and automated an HMGP project application that was adopted by all eight states and was used as a model for the national application. Finally, the region has obligated funds totaling more than \$455 million in 69 disasters from 1993 to 2000.

Region IV Mitigation instituted a three-year contracting period for flood studies. Region IV Mitigation staff have served as panel members in selecting contractors for Hazard Mitigation Technical Assistance Programs, Building Performance Assessment Teams and the Coastal Construction Manual. Mitigation staff have also served on the advisory committee to review the Coastal Construction Manual.

Region IV has fully implemented the Cooperating Technical Communities (CTC) program and the Map Modernization Program. In 1999, Region IV provided \$5,000 to each of eight states to identify potential communities for participation in the program. In 2000, Region IV expected to use approximately \$600,000 in CTC funds to finalize flood studies initiated by CTC communities.

Region IV promotes tornado safety and awareness by funding warning and communication systems, promoting safe rooms and also, by developing a relationship with Clemson University, a center of excellence in wind engineering, mitigation and safe rooms. Currently, Clemson has been tasked to develop ideas for safe havens in existing homes, test roof materials, hurricane straps and clips, and wall configurations.

Recommendations include creating wind-resistant exterior envelopes for homes, better-connected roofing systems and a “unitized” home structure in which major components are well connected to other components—from the roof all the way through the foundation.

Community Mitigation

The major goal of community mitigation is to administer the National Flood Insurance Program (NFIP) within the states and encourage and instruct them to manage their own program. Timely and accurate technical assistance to residents and building trade specialists is vital to achieving compliance with flood loss reduction techniques and strategies.

As of January 1994, Region IV had a total of 2,335 communities participating in the NFIP, with over a million policies and \$128.7 billion of policy coverage. In 2000, there are 2,620 participating communities with more than 2 million policies and \$266.7 billion of coverage. Pre-disaster mitigation incentives such as the community rating system (CRS) and Flood Mitigation Assistance program serve residents and businesses in areas that continue to experience high growth and development. In the CRS, Region IV leads the nation in the number of participating communities. There are 200 communities in Florida participating in the CRS, representing 97 percent of the flood insurance policy base. The annual premiums on those policies would be significantly higher than they are today if Florida communities had not taken proactive steps to mitigate flood hazards through the CRS program. For instance, the city of Sanibel is one of two communities in the nation that has a Class 5 rating, which translates into 30 percent savings on NFIP premiums.

The Flood Mitigation Assistance program in Region IV has approximately 22 percent of the national repetitive loss structures in eight states. The program has received approximately \$19.5 million in the past four years and has mitigated more than 100 structures. In order to elevate structures in the floodplain, an innovative project in Florida, was to build on top of existing structures converting the lower portion into compliant, unfinished space. Region IV has developed a repetitive loss prioritization plan currently under review by Headquarters.

Region IV's Community Mitigation branch has developed and implemented a variety of field training and field workshops.

NEMIS

North Carolina needed a management tool to capture Hazard Mitigation Grant Program (HMGP) information. The result was a database later used by developers of the National Emergency Management Information Systems (NEMIS) as a model for the NEMIS mitigation module. In addition, Region IV created a database, now integrated into NEMIS, to capture flood mitigation assistance data. Also, Region IV staff participated in the development of a NEMIS HMGP Job Aid.

Disaster Response and Recovery Programs

In Region IV mitigation has been fully integrated into the structure of the emergency response team (ERT) and the advance element of the response team (ERT-A). Mitigation assists from the opening of the regional operations center (ROC) to disaster closeout.

Region IV also participated in the building performance assessment team following hurricanes Andrew, Opal, Fran, and Georges.

Substantial Damage Estimator – After Hurricane Fran in 1996, the town of Topsail Beach, N.C., needed assistance in handling its volume of substantial damage. The result was the model for the Substantial Damage Estimator tool produced by FEMA headquarters. Currently, Region IV is revising the tool through a mitigation technical assistance program. Following Hurricane Floyd in 1999, Region IV created flood recovery maps to provide current approximate information or best available data to communities in various zones to aid in the reconstruction process.

The Safe Haven Promotion

The promotion of safety and awareness through the funding of disaster warning and communications systems, and the promotion of Safe Rooms by Region IV was aided by developing a relationship with Clemson University – a center of excellence in wind engineering, mitigation, and safe rooms. Clemson engineers were tasked by Region IV to develop ideas for safe havens in existing homes, and to test roof materials, hurricane straps, clips, and wall configurations. Engineers say that the devastation of Hurricane Hugo changed the nature of their thinking toward development of inexpensive ways for people to make their homes stronger and more wind-resistant.

Another major Region IV initiative undertaken by Florida in May 1999, is known as the Florida Warning Information Network (FWIN). This grant project was a direct result of the previous year's Region IV tornado summit.

The first of its kind, the FWIN project incorporates early warning detection and alerting systems, tornado Safe Rooms and community centers, statewide satellite voice and data communications systems, public education and information. It brings together, in collaboration, business and industry, not-for-profit agencies as well as local, state and federal agencies and offices. Plans include construction of up to 30 tornado-safe rooms in single-family dwellings – in cooperation with Habitat for Humanity – and the construction of three demonstration Safe Rooms in conjunction with the Tampa Bay regional area "Project Greenhouse." |

Village Creek: Classic Mitigation

For more than half a century, several residential areas of Birmingham, Ala., in the floodplain of Village Creek were repeatedly flooded during periods of prolonged rain. These floods damaged homes, displaced residents and created a community health hazard due to sewer backups. In an effort to end this damage cycle FEMA in recent years has been providing funds for extensive buyouts to clear the floodplain of structures. Thus, when severe storms hit Birmingham with four inches of sudden rain March 10-11, 2000, there was almost no residential property damage, no displacement of residents and no need for assistance even though floods elsewhere in the city were serious enough to result in a presidential disaster declaration.

Had those structures not been removed and the occupants relocated to safe ground, there would have been a repeat of the structural flood damage. The 2000 deluge duplicated the 13.6-foot flood level of March 1996, when hundreds of properties in the Village Creek floodplain were damaged. By contrast, this time only five homes and 10 apartments sustained minor damage. A 20-year cooperative effort by the city, the state and the federal government, at a cost of \$37.5 million, had removed 845 structures and returned the floodplain to its natural function as a retention basin for flood waters.

Mitigation on the Move

Following Hurricane Georges in 1998, Region IV fielded the nation's first mobile mitigation assistance vehicle, a motor home equipped with staff and materials to offer disaster victims help with registration questions and technical assistance in rebuilding their homes to reduce disaster damage. The vans contained displays and publications on construction methods and were supported by computers, fax machines and telephones. The vans were especially useful to disaster victims in remote areas who were unable to visit disaster recovery centers. The mobile mitigation assistance vehicle has been deployed to North Carolina, Florida and Alabama.

CONFERENCES

BellSouth/Project Impact: Lifeline Summit

Top business executives from more than 200 corporations gathered in Atlanta in March 2000 to focus in support of *Project Impact: Building Disaster Resistant Communities*.

In a first collaboration of national and business leaders aimed at changing the way America looks at disasters, Region IV and BellSouth hosted a special summit. Participating in the Lifeline: Project Impact Business Summit, were FEMA Director Witt and Duane Ackerman, chairman and CEO of BellSouth. Also attending were Transportation Secretary Rodney Slater and former Secretary of the Treasury Robert Rubin. Additionally, participants included Gov. Roy Barnes of Georgia, Gov. Jim Hunt of North Carolina and Gov. Don Sundquist of Tennessee.

Atlanta Tornado Summit

While Oklahoma and Kansas in the Midwest are often described as "tornado alley," a tornado anywhere is a serious concern to emergency officials. In February, March and April of 1998, more than 100 lives were lost in tornadoes in the southeastern United States. This was the worst year for tornado deaths since 1974. Florida, Alabama, Georgia, Tennessee, Kentucky, and North Carolina found themselves in the top ten states nationally for tornado fatalities.

In an effort to explore new ways to reduce loss of life and property in tornadoes, Region IV Director John B. Copenhaver organized a summit conference in Atlanta in the spring of 1998.

The key questions were:

Is there enough shelter space?

Are warning systems adequate?

Can we make buildings more disaster resistant?

Among the summit's recommendations, all of which have been realized, were increasing public awareness of tornado danger, putting tornado safety information on videos and web sites for public use, disseminating detailed information on building Safe Rooms and installing seismic tornado detectors linked to weather warning radios and sirens.

Region IV has approved initiatives to mitigate tornado damage worth \$5 million since the summit meeting. Infrastructure assistance funds have been used to provide technical assistance for the design and construction of safe schools and design standards have been developed for tornado shelters in schools.

It funded a project at Clemson University to develop a plan for economical modifications to strengthen a structure's ability to withstand destructive winds.

“A SAFE PLACE TO GO WITH TIME TO GET THERE.”

National Flood Proofing Conference

In February 2000, a national flood-proofing conference was held in Baton Rouge, La., a *Project Impact* community. Co-hosted by the State Floodplain Managers Association, FEMA Region IV and others, the conference focused on flood-proofing methods, materials, issues, programs and techniques. Contractors, federal, state and local officials gathered to share and learn about the state-of-the-art in flood proofing.

Eastern US Mitigation Summit

In a continuing effort to expand mitigation measures to reduce disaster vulnerability in the private sector, Region IV organized the Eastern US Mitigation Summit in Wilmington, N.C., Dec. 8-10, 1997. Director Witt delivered the keynote speech to more than 200 business leaders, federal, state, local, and academic officials who participated in the summit. Invitees represented public and private entities from 21 eastern states, the District of Columbia, Puerto Rico and the U. S. Virgin Islands.

TECHNOLOGY

Remote Sensing

The FEMA headquarters emergency support team established regional remote sensing coordinators in all 10 regions. During the 1999 hurricane season, Region IV ordered use of remote sensing to provide visual information useful to recovery officials and planners. Employing synthetic aperture radar and aerial photography, data were collected and used to determine the extent of flooding as mitigation assessments were carried out using National Flood Insurance Program 100- and 500-year floodplain data in GIS operations. The aerial photography was used in a more detailed way because it covered the state's four major rivers and the entire coastline. This was the first regional-level remote sensing operation.

Mobile Disaster Field Offices – Quickening The Response

It is not unusual for Region IV to respond to more than one declared disaster at the same time. There were multiple concurrent disasters in 2000 and 1999, and 18 regional disasters were declared in 1998 – at least one in every month except May.

In an effort to expedite the delivery of federal and state assistance to the victims of these disasters, FEMA equipped a bus and several travel trailers to serve as mobile disaster field offices. These units can be moved directly to disaster sites to immediately provide essential communications and serve as a central point for assembling a disaster field office and planning and administering recovery activities.

The logistics section of the Information Technology Services branch acquired a commercial bus as surplus from the Department of Energy, and equipped it with satellite telephones, and tracking receivers for all major networks (ABC, NBC, CBS, FOX The Weather Channel and CNN). It also contains fax, copier and scanner equipment with access to e-mail and the Internet. A 10-kilowatt generator and two auxiliary air conditioning systems support these facilities.

The unit's primary mission is to support the advance emergency response team and serve as a communications/development office. However, it also has been used as an office for evaluators during exercises and for mitigation field programs in disaster areas.

Logistics and the emergency response team have similarly configured five travel trailers to support field operations serving as small disaster field offices. These units establish a presence for FEMA at the very beginning of disaster recovery, lending encouragement to disaster victims and local officials.

The Regional Operations Center (ROC)

Region IV's regional operations center (ROC) serves as the model ROC for other regional offices within the agency. Two years in development, the Region IV ROC became fully equipped in 1999, permitting staff to effectively manage a disaster response or recovery operation.

Designed to Region IV's rigid specifications, the ROC is so well equipped and staffed that, during activations, it serves as a training ground for personnel from other regions. Due to Region IV's high disaster activity level, its facility size, innovative design and equipment layout, staffing, and ROC operational procedures were paramount considerations in its creation and ongoing procedural evolution.

One innovation of note is a special provision for media remote units – television and radio – to have access to the ROC. Special access through the facility's exterior wall allows media cable connection to the interior of the ROC to permit live remote telecasts without causing interference or disturbance to the normal work activities of ROC personnel.

The Region IV ROC is activated upon notification of the potential or actual occurrence of an emergency or disaster in any of the Region IV states. Once activated, the ROC's mission is to coordinate federal response efforts until the emergency response team is established in the field and the federal coordinating officer assumes coordination responsibilities. The ROC establishes communications with the FEMA headquarters emergency support team and the affected state's emergency operations center, and serves as the temporary coordinating office for regional/federal activity.

Staffing the Regional Operations Center

The regional operations center (ROC) was transformed from an ineffective staff function unable to initiate any 'mission assignments' during Hurricane Andrew, to one that issues about 80 percent of all mission assignments for response/recovery operations during any event requiring its activation. The ROC is capable of managing a multi-state response; employing and deploying regional and back-up regional support; accommodating, briefing and supporting the national emergency response team during pre-deployment staging; and managing effective mobilization of ROC operations to support needs of disaster victims.

Permanent ROC Staffing Became the Key

Since its inception, the regional operations center (ROC) staffing was random and last minute, based on availability of personnel to fill positions. In the interest of stability and efficiency, a decision was made to create a permanent ROC staff from existing personnel.

Region IV assigned trained and skilled members of all divisions to permanent positions in the regional operations center. These key positions included ROC director, Operations chief, Mission Assignment coordinator and branch chiefs within the Operations section. This ensured

experienced leadership for the many vital functions of the ROC and enhanced regional response capabilities.

PROGRAMS AND PROCEDURES

ERT-A: Planning Disaster Response

Region IV led the effort to develop plans for deploying the advance element of the emergency response team (ERT-A) before a storm's impact and pre-positioning resources prior to a declaration. Based on its experience with many disasters, the region also strengthened the role of FEMA-state liaison officers and their interaction with the ERT-A.

Seeking expedited damage assessments, the region developed an interagency field assessment team. Barely one year after Andrew in August 1993, Hurricane Emily provided the region the opportunity to pre-deploy the ERT-A and pre-position resources before landfall. This also was the first deployment of the field team to make an early assessment of damage. Despite the fact that Emily only touched the Outer Banks of North Carolina and caused minimal damage, this event validated the region's effort to become more immediately responsive to a state's needs following a disaster.

The procedures for pre-deployment of assets and resources and the use of mobilization centers were validated again with Hurricane Opal, a multi-state disaster in September 1995. Opal was managed by the ROC in Atlanta, with deployment of early response teams from headquarters and the region to Florida, Alabama and Georgia.

Territory Logistics Center—Born in Region IV

Nearly two decades ago, Region IV began collecting emergency supplies in a warehouse at Fort Gillem in Atlanta that had been used to store furniture for disaster field offices. These supplies were then trucked to disasters to help meet immediate needs.

Gradually, what began as mostly a cots-and-blankets delivery evolved into a sophisticated inventory that would include plastic sheeting to cover damaged roofs, ready-to-eat meals, tents, ice, generators, water, pumps and batteries—even diapers.

Today there are three central supply facilities within FEMA, known as territorial logistics centers, from which emergency items are shipped to disaster communities. Sometimes the trucks are staged in a nearby city even before the expected storm makes landfall.

This Region IV concept worked so well that FEMA has made the logistics centers a headquarters function. In addition to the one in Atlanta, others have been established in Denton, Texas, and San Francisco. The centers contract with private companies to move emergency supplies to distribution points in a disaster area.

DFO Development: A Better Way of Serving the Public

Because of its high level of activity, Region IV has been called upon to establish field offices suitable for disasters of every size and shape. It became evident that some uniform standards were needed for disaster field office (DFO) development to improve the efficiency and speed of construction.

Standards written by the Operations Support division incorporate a six-step process to reduce assembly time while giving users a voice in the configuration. Users include the federal coordinating officer, the affected state, information technology, safety, security and the director of Operations Support, who makes the lease order. The six-step approval process that resulted

has been adopted by other regions and was used most recently to set up an office for the 2000 western fire response.

Public Assistance Program Re-engineered

In February 1997, headquarters announced that the existing Public Assistance program was about to undergo re-engineering to improve delivery of services. The new system had to be field tested in a recovery operation and the one selected was a Region IV disaster in Kentucky. Elements of the above delivery system were incorporated into Region IV's operations prior to its official adoption. In this change, and the inauguration of the National Emergency Management Information System (NEMIS), Region IV has provided personnel and developed recommendations to enhance the Public Assistance program delivery system. Since the new delivery system is performance based rather than compliance based, the partnership of federal, state and local governments is more equitable.

Between 1993 and 2000, FEMA provided \$1.8 billion in public assistance dollars to Region IV states, with Florida, North Carolina and Georgia accounting for 70 percent. The money went to 10,824 applicants.

Region IV Human Services: Biggest Workload in the Nation

The Human Services branch in Region IV has provided assistance to nearly 700,000 disaster victims since Hurricane Andrew, responding to 86 presidentially declared disasters and scores of emergencies. It is, year-to-year, the nation's busiest human services branch. In 1998 alone, there were 18 disasters in the region, at least one in every month except May.

Region IV developed and managed the largest manufactured housing program in more than 20 years, serving 5,263 families displaced by Hurricane Andrew. In all, nine disaster manufactured home programs housing more than 9,000 families have been managed or coordinated by Region IV and the region has conducted technical training and provided assistance to other regions based on this experience.

After the National Emergency Management Information System (NEMIS) was introduced, Region IV conducted a workshop for its eight states to prepare them to use the system. It also developed a handbook for state and FEMA Individual and Family Grant Program (IFG) coordinators that was adopted nationally for setting up the IFG program in NEMIS.

REP Empowerment: Formula For Better Customer Service

During Director Witt's early days the concept of empowerment was presented. Placing the authority for decisions at the point of program delivery has underpinned many of the changes within the agency. During reorganization, this concept was further supported within the Preparedness, Training and Exercise division in Region IV.

Region IV was quick to embrace Director Witt's concept of empowerment. It was first put into practice to enable the Radiological Emergency Preparedness (REP) section to work independently with the states to determine exercise design, plan reviews and technical assistance requirements. Programmatic consistency was ensured through a review of actions and activities by a team of peers within the branch and validated as to conformance to existing policy and guidelines.

DIR: Better Prepared With Disaster Initiated Review

All nuclear sites are located on waterways, either coastal or riverine, and are therefore subject to harm from natural disasters. Five of the 17 sites in the Southeast are located on the coastline and have been impacted by hurricanes since Andrew.

FEMA has the responsibility for making a disaster initiated review (DIR) of a nuclear unit's readiness to safely go back on line after being shut down for the duration of a storm. The DIR is, in essence, a preliminary damage assessment conducted jointly with state and local government, the Nuclear Regulatory Commission, the plant operator and FEMA. The focus of this review is to jointly establish the impact on infrastructure and resources. The review was begun in Region IV to avoid the delays experienced following Hurricane Andrew, when it took several months to get the power plant back on line.

The cost to the utility for each outage day equates, based on industry estimates, to \$500,000 per operating reactor. The review team now provides much faster certification through the regional director that 'reasonable assurance' of safety has been restored.

Adoption of the disaster initiated review has resulted in a reduction in financial losses incurred by the utility operator following a natural disaster, brought improved working relationships with the NRC and established a more workable partnership among the responsible agencies.

Impact of Empowerment of Regional Program Officials

The impact of empowerment can be seen in the demonstration of capabilities supported by the federal, state and local officials responsible for the 17 nuclear production facilities in Region IV. This capacity and capability can further be witnessed during natural disaster response operations. Form and function have begun to transform into a singular requirement firmly founded in preparedness, fully supportive of an aggressive corrective action process designed to enhance capability versus merely meeting a federal requirement.

Operations -- Changes For Better Service

The Response and Recovery division, Operations and Planning branch, was established in 1996 at the Federal Regional Center in Thomasville, Ga., to provide a more effective regional emergency disaster response.

By co-locating this branch, with its primary emergency response, operational and information and planning functions, with the regional state liaisons of the Preparedness and Training branch and Thomasville Mobile Emergency Response Support (MERS), an effective "first federal response element" is ready to respond and monitor the delivery of federal disaster assistance to states, local governments and disaster victims.

The federal center is geographically close to high-risk areas on the gulf and Atlantic coasts and can deploy first responder staff and equipment expeditiously.

The operations and planning branch planned to handle the consequences of an emergency during the critical Cassini satellite launch by NASA in October 1997. The mission was to prepare for a potential off-site radiation contamination accident involving the spacecraft, which carried a payload of radioisotope thermoelectric generators and radioisotope heater units.

In 1998 a staff member was appointed to the FEMA and Immigration and Naturalization Service mass migrations committee to develop a plan for addressing under FRP guidelines the requirements for facilities to house detainees in response to a mass immigration incident until a determination of their status and/or deportation.

The division coordinated special plans for emergencies that might arise out of the Atlanta Summer Olympics. The result was formation of an Olympic coordinating committee and

development of a continuity of operations plan, a training and exercise plan and establishment of an alternate regional operations center in an adjoining county so that staff could continue to function even if an emergency closed the city's transportation system and streets.

The Centennial Park bombing incident proved the value of the plans as response actions were actually tested. Vice President Gore presented to Region IV the prestigious "Hammer Award" (building better government) for support of the Summer Olympics in Atlanta.

Direct Involvement In Space Launches.

During the early 90's FEMA supported oversight of the Ulysses and Galileo space launches.

The launches were significant in that they were using radioactive power generation cells, which had a potential for being placed into the atmosphere in a catastrophic failure scenario. Publicity about the event and this equipment drove a very energetic response. These were neither the first nor last such launches using this form of power generation capability. FEMA however did not involve itself in another until the Cassini launch in 1998.

The fact that launches were going on regularly without notice to state or local emergency management was a significant problem. The three earlier missions were singled out because of the presence of radioactive material. The propellant alone aboard each vehicle is extremely toxic and had the potential for significant civilian casualties if aborted early in the liftoff.

Because of these concerns and initiatives taken by the Brevard County emergency manager, the Region IV Radiological Emergency Preparedness (REP) coordinator for Florida opened discussions with the county focusing on their participation in exercises and training supporting the St. Lucie Nuclear Plant. Although Brevard is outside the planning zones for this site the county director approached this as an opportunity to improve the preparedness of his response organizations and to enter into a partnership with other counties to attain a heightened degree of readiness.

Positive Aspects of the Change

The inclusion of Brevard County into the planning base of the St. Lucie nuclear site has resulted in:

- Addition of other adjacent counties, presently organized into planning zones, into the program.
- Improved communications between county emergency management organizations.
- Adoption of standardized concepts of operation in adjacent counties.
- Tailored exercises running simultaneously with REP events, which benefit from inclusion of other federal, state and local players.
- No added cost to the utility operators, while benefiting from the good will associated with broader-scoped events.

Impact of Inclusion of Added Counties Into Exercise Program

The impact has been remarkable. The counties that participate in the Radiological Emergency Preparedness (REP) program have long been considered the best-prepared counties in the region. Even the National Emergency Management Association (NEMA) has publicly commended the program and its positive impact on preparedness. Prior to this inclusive approach this enhanced capability was not being shared. County directors from REP counties are inviting counterparts to participate, key staff members are being exchanged, and exceptional practices are being developed.

The states participating in this process are benefiting immensely. Every exercise, is drawing added players and participants. The exercises are valuable - not just another of many required practices to demonstrate only what the evaluation team wants to see. It is their event, their resources and their time used to improve their readiness. And that is an impact of meteoric proportions.

FEDERAL-STATE PARTNERSHIPS IN REGION IV

CAR—Capability Assessment For Readiness

A primary mission of FEMA is to provide technical assistance to states and local jurisdictions in establishing their ability to manage emergencies. To do this, they have to be able to evaluate their ability to respond to the whole spectrum of potential hazards. In 1997, Region IV was in the forefront of developing and testing new and better ways to test readiness.

FEMA began development of CAR (capability assessment for readiness) as a more workable method for identifying shortcomings in emergency management capabilities. From inception, it was developed to be useful over the long term rather than a “snapshot in time” of capabilities. In addition, CAR would assess the capability of states to perform daily management of emergencies involving any hazard, rather than a particular hazard, such as floods.

In cooperation with the National Emergency Management Association, the International Association of Emergency Managers, and the State Floodplain Manager’s Association, the initial CAR was developed and field-tested in North Carolina and its performance was documented.

Overall, states indicate that the CAR is perhaps the best assessment tool FEMA has ever provided, and the agency is now working with those same partners to develop a local CAR, due in fiscal 2001. CAR data is helpful in determining what taxpayers are getting from the use of tax dollars to build emergency management capabilities.

The development of the capability assessment for readiness has increased focus on the importance of forward thinking - tying assessment results to more future goals and objectives and multi-year development of emergency management capabilities. This already appeared in most state grant proposals for fiscal 2000, and is expected to a greater degree in fiscal 2001.

Customer Service Sharpens Clear Communication

Region IV is keenly aware of the need for clear lines of communication and coordination between the regional office and the states it serves. As a result, in January 1999, the senior management team of Region IV kicked off a program of visits to each of the eight state emergency management offices in the region.

The purpose of these “customer service visits” has been to promote face-to-face discussions between regional and state senior staff on any and all issues of interest. This customer service program has been enthusiastically received by every state in Region IV. A visit to North Carolina even received positive mention in the Federal Register. Plans called for a continuance of the visits through fiscal 2001.

Cooperating Technical Communities

As part of FEMA’s Map Modernization program, the Region IV office has become actively engaged in an initiative called Cooperating Technical Communities (CTC) with the July 1999 selection of Charlotte/Mecklenburg, N.C., as the nation’s first CTC community. This program brings state, local and regional agencies together as partners in FEMA’s flood hazard mapping

program, which is vital to flood mitigation planning. The program leads to better flood insurance rate maps by utilizing local expertise and experience to provide improved flood hazard identification. The community is then able to use the new maps to implement better local floodplain management initiatives.

Charlotte-Mecklenburg Stormwater Services created an effective partnership for floodplain and stormwater management. The stormwater utility is cooperatively administering its stormwater management program for both the city of Charlotte and Mecklenburg County. The city and county have committed more than \$1 million for detailed flood analyses of drainage basins and consequent flood mitigation efforts, prioritizing areas undergoing rapid urban development. FEMA is seeking qualified communities and agencies to be partners in maintaining up-to-date digital flood insurance rate maps (DFIRMs). The CTC initiative takes advantage of local expertise to update flood insurance rate maps and is designed to share ownership of flood hazard maps among state, regional, and local entities through increased involvement in the mapping process.

With more than 18,000 communities participating in the National Flood Insurance Program (NFIP), it is a major task to keep flood maps up to date. To address this challenge of updating and maintaining flood hazard information in a timely and cost-effective way, it is important to partner with communities that are intimately familiar with local floodplain issues. By creating a strong local program that reinforces the connection between mapping and floodplain management among participating communities, the NFIP will be better able to reduce losses to lives and property.

North Carolina: First Cooperating Technical State

The state of North Carolina, through FEMA's Cooperating Technical Community partnership initiative was designated a Cooperating Technical State (CTS) on Sept. 15, 2000. As a CTS, the state will assume primary ownership and responsibility of the National Flood Insurance Program (NFIP) flood insurance rate maps (FIRMs) for all North Carolina communities. The project will include conducting flood hazard analyses and producing updated, digital maps.

The state will be acquiring high-resolution topographic data and will develop accurate digital elevation models as the first phase of this project. Next, they will use the improved topographic data and develop up-to-date flood hazard data and floodplain maps.

In August 2000, the North Carolina General Assembly allocated \$23.2 million to the flood-mapping project. FEMA has contributed an additional \$6 million toward the project as well as substantial in-kind contributions of engineering, mapping, and program management services for the state's project. Due to the devastation of Hurricane Floyd, North Carolina has come to realize the importance of accurate floodplain mapping in flood hazard mitigation. Thus, they have become the first state to proactively help FEMA modernize their maps by allocating considerable state funds.

HURRICANE PREPAREDNESS INNOVATIONS

THE HURRICANE LIAISON TEAM

The liaison team is another activity unique to Region IV that is the result of FEMA's emphasis on disaster preparation and its close cooperation with state and local emergency officials.

In 1995 Region IV was the target of 19 tropical storms. As these storms began to threaten the mainland, the National Hurricane Center (NHC) in Miami was nearly paralyzed by telephone calls from public officials and emergency managers seeking information to help them prepare their communities for the approaching violent weather.

NHC programs involving state and local emergency managers had made them more aware of actions that could be taken in advance of storms and the importance of timely information and guidance from hurricane forecasters. Then, during the near-record 1995 hurricane season, the huge number of information requests threatened the NHC's ability to carry out its primary forecasting mission.

In an effort to ease the problem during the approach of hurricanes Felix and Opal, FEMA, state and local officials were assigned to the hurricane center to serve as liaisons between NHC forecasters and the state and local emergency managers in need of weather information.

Due to the success of the initial effort the governor of Florida and the NHC director requested that FEMA activate a liaison function for future storms. The Hurricane Liaison Team subsequently was formally established in a partnership between FEMA and the National Weather Service.

In addition to weather forecasts, advisories and briefings, the liaison teams facilitate response decisions through timely exchange of critical information and help identify potential needs for federal emergency support officials planning the overall response to the storm.

EVACUATION LIAISON TEAM

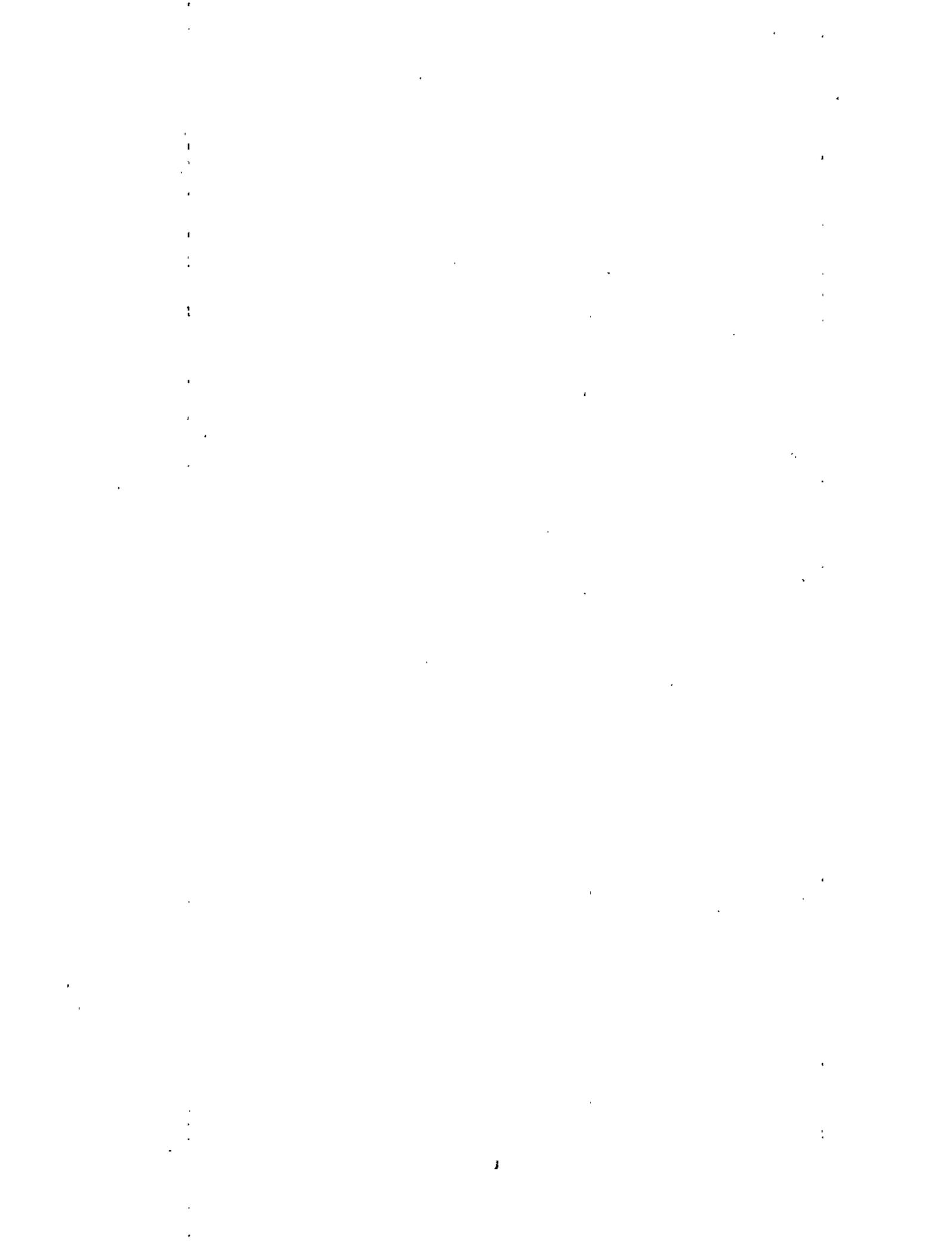
One of the response mechanisms of FEMA has been establishment of evacuation liaison teams (ELTs) combining the expertise of emergency management, technical and transportation specialists.

The ELT acts as a clearinghouse and communications link between emergency management agencies and highway patrol and transportation officials to provide timely and accurate information to facilitate rapid, efficient and safe evacuation of threatened populations.

The Department of Transportation acts as the lead agency in a three-member team that always includes one emergency management specialist from FEMA and an information technology specialist from the U.S. Army Corps of Engineers.

The teams are housed in the regional operations center (ROC) as an extension of the transportation emergency support function. When the ROC is operational and the threat of a major hurricane indicates a potential need for a multi-state evacuation, the ROC director will activate the ELT. States also may request activation.

The teams were formed following an intensive Southeast United States Hurricane Evacuation Traffic Study that developed a number of initiatives, currently in place or under review, to better manage evacuations.



REGION V

Regional Directors & Deputy Regional Directors FEMA Region V, Chicago

Dates	Regional Director	Deputy Regional Director
Oct 1998-present	Dale W. Shipley	Janet M. Odeshoo
January 1998-October 1998	Janet M. Odeshoo (Acting)	David A. Skarosi (Acting)
January 1997-January 1998	Michelle Burkett	Janet M. Odeshoo
January 1995-November 1997	Michelle Burkett	Joan Montfort
January 1993- January 1995	John Powers (Acting)	Joan Montfort
July 90-January 1993	Arlyn Brower	Joan Montfort