

KEY DISASTERS

Disaster: **Minnesota Storms and Floods**

DR-993-MN

BACKGROUND:

An unusual pattern of storm systems passed through southwest Minnesota in 1993, beginning Mother's Day weekend and continuing into July. The sequence of storm events soon encompassed southern Minnesota, including the Minnesota and Mississippi river counties. The southern third of Minnesota, including virtually the entire watershed of the Minnesota River, experienced at least 150 percent of normal precipitation for the period May 6 through June 21. This excessive spring precipitation occurs about one year in ten. During this period Marshall received 16.5 inches (the highest official total so far known) which is about 300 percent of normal.

The preceding month, April 1 through May 5, 1993, had also been on the moist side with over 125 percent of normal precipitation. This resulted in wet and saturated conditions prior to the events that commenced on May 6.

On May 19, the Minnesota governor requested a major disaster declaration for infrastructure damage in nine counties due to the severe storms, flooding and tornadoes that occurred from May 6-19, 1993.

On June 11, 1993, Minnesota was granted federal funding to assist state, local and certain nonprofit agencies with the repair of public facilities. As flooding and severe storms continued, the declaration was amended to include Individual Assistance programs and the incident period was extended to August 25, 1993. Fifty-seven counties were designated as disaster areas. After the disaster field office closed, activities were combined with subsequent disaster declarations in Wisconsin (DR-994-WI, storms, tornadoes and flooding) and Illinois (DR-997-IL, storms and floods) and managed from a central location in Chicago, Ill. This reduced the number of employees required to run three simultaneous operations and significantly reduced administrative expenditures by leasing one space.

ASSISTANCE PROVIDED (as of April, 2000):

Infrastructure/Public Assistance: 900 applicants; 3,400 damage survey reports; \$32+ million disbursed

Mitigation: 22 projects, \$13+ million

Human Services: Housing Program 6,169 applications received; 5,216 approved for \$8.8+ million; Individual and Family Grants: 2,330 applications received, 1301 approved for \$1.4+ million

BACKGROUND:

The severe flooding and flash flooding that occurred across much of the state of Wisconsin during June and early July, 1993, was a result of a long and persistent weather pattern that lingered over the United States.

By early spring, high pressure began to establish itself in the upper atmosphere over the southeastern part of the country, while a persistent long wave trough developed over the western states. This pattern intensified by early summer, not only producing heavy rainfall in the upper Midwest, but also a heat wave and drought over parts of the East and South.

Because of this upper air pattern, cold fronts that would normally move southeast through the upper Midwest, stalled and became stationary from the upper Great Lakes, across Wisconsin and into the central Plains. Areas of low pressure diving southeast in the long wave trough redeveloped over the central and southern Rockies and moved northeast along the fronts, producing heavy amounts of precipitation over the mid and upper Mississippi valleys. Above-normal precipitation occurred across much of Wisconsin during April and May. This pattern began with prolonged periods of rain and heavy late-season snowfalls, then continued as severe thunderstorms.

Rainfall intensified during the month of June. In La Crosse, for example, the June precipitation total of 10.79 inches made it the wettest month in 93 years. Of this amount, 8.35 inches fell in the week ending June 20. Severe weather also accompanied the heavy rainfall during the month with several tornadoes, wind and large hail events.

During late June and early July, the heaviest rainfall shifted from the central to the southern portions of the state. Officials reported that 18 inches of rain fell between June 8 and July 5 in and around the Stockbridge, Hilbert, and Brillion areas.

On June 29 Wisconsin's Governor Thompson requested a major disaster declaration for Individual (human services) and Public Assistance (infrastructure support) for 30 counties.

On July 2 Wisconsin was declared a major disaster area as a result of the severe storms and flooding from June 7 through Aug. 25, 1993. A total of 47 counties were included in the disaster designation. Due to the prolonged incident period and the numbers of applications received, the application period for this disaster was extended through Dec. 15, 1993.

The disaster field office was opened on July 7 in Eau Claire, Wis. Later, after the Eau Claire field office closed, activities were combined with disaster recoveries in Minnesota (DR-993-MN) and Illinois (DR-997-IL) and managed from a central location in Chicago, Ill. This allowed Region V to reduce the number of employees required to run three disasters and to significantly reduce administrative expenditures by leasing one space.

ASSISTANCE PROVIDED:

Public Assistance/Infrastructure: 627 applicants (state, local and certain nonprofit agencies)
3,450 damage survey reports, \$22+ million

Mitigation: 5 applicants, \$10+ million

Individual Assistance/Human Services: Housing: 2,775 applications received, 2346 approved for \$4+ million; Individual and Family Grant program: 1,208 applications received, 748 approved for \$1.3+ million

BACKGROUND:

The upper Mississippi River experienced unprecedented flooding during the summer of 1993. New record crests were recorded along the Mississippi River from the Quad Cities (Bettendorf and Davenport, Iowa; Moline and Rock Island, Ill.) south to an area below St. Louis. Backwater from the Mississippi brought many of the tributaries of the river to record or near record levels. Heavy thunderstorms caused numerous flash floods across Illinois.

The position of the upper jet stream and the high-pressure system off the East Coast combined to create a convergence zone over the upper Midwest during June and July. Cool dry air from the northwest collided with the southerly flow of warm, moist unstable air from the Gulf of Mexico. Successive waves of thunderstorm complexes developed in the late evening hours and traversed across parts of the upper Midwest. These thunderstorm complexes dumped torrential rainfall and caused flash flooding and other severe weather along their path.

This resulted in significant rises and subsequent flooding on many of the tributaries of the Mississippi River in the affected states. Many streams in Illinois were already experiencing above-normal flows as a result of extensive soil moisture and recent flooding from snowmelt. By mid-June, many locations along the upper Mississippi River were above flood stage and rising as swollen tributaries upstream continued to empty their near-record to record flows into the Mississippi. Many rivers in Illinois, including the Pecatonica, Rock, Big Muddy and Illinois rivers, were above flood stage as well. The National Weather Service reported rain on 56 days between June 1 and Sept. 14, 1993.

By July the weather pattern remained largely unchanged and waves of thunderstorms continued to dump torrential rains over the upper Mississippi River watershed. In west central Illinois, nearly 9 inches of rainfall occurred in a two-day period ending July 24, bringing the Spoon River to record levels at Seville, Ill.

The Mississippi River crested from the Quad Cities down to Keithsburg on July 9. Cresting continued on July 10 from Burlington to Keokuk, on July 13 at Quincy, and on Aug. 1 at St. Louis. The Illinois River crested at a new record of 442.3 feet at Hardin (Calhoun County) on Aug. 3 - 17.3 feet over flood stage.

On July 6, Illinois' Governor Edgar requested a major disaster declaration for Public Assistance and Individual Assistance in 12 counties.

On July 9, 1993, Illinois was declared a major disaster and federal funding was made available for Individual Assistance. The disaster was attributed to severe storms, Mississippi River flooding and other riverine flooding that began on Apr. 13. As flooding continued, the declaration was amended to include infrastructure assistance and the incident period was extended through Aug. 31. A total of 39 counties were declared disaster areas.

The disaster field office was opened on July 13 in Moline, Ill., and remained open until November 1993. After the disaster office closed, activities were combined with recovery operations in Minnesota (DR-993-MN) and Wisconsin (DR-994-WI) and run from a central location in Chicago, Ill. This allowed the region to reduce the number of employees required to run three operations and significantly reduce administrative expenditures by leasing one space for all three disaster field offices.

ASSISTANCE PROVIDED:

Public Assistance: 579 state, local and eligible nonprofit agency applicants, 5,000 damage survey reports, \$137+ million in funding

Mitigation: 39 projects for \$34+ million

Human Services: Housing: 40,004 applications received; 32,721 approved for \$50+ million;

Individual and Family Grant: 22,305 applications received, 15,543 approved for \$17+ million

LESSONS LEARNED/INITIATIVES:

Many new approaches were created and lessons learned during the recovery process after the Great Midwest Flood (DR-993-MN, DR-994-WI and DR-997-IL):

~ The disaster was an impetus for FEMA to implement a nationwide mitigation program under the authority of the Hazard Mitigation Grant Program with an emphasis on flood-prone property acquisitions.

~ The entire town of Valmeyer, Ill., was moved from the floodplain - as well as over 2,000 other structures along the Mississippi River.

~ Illinois, Wisconsin and Minnesota created multi-agency mitigation advisory councils and groups to address post-disaster recovery and long-term recovery. These councils or groups are still in existence and continue to address disaster planning and recovery issues.

~ Darlington, Wis., initiated a unique downtown floodproofing project, funded through the Hazard Mitigation Grant Program. The city has been recognized nationally for their mitigation efforts. They received a Historic Preservation achievement award from the State Historical Society of Wisconsin.

~ Long-range recovery groups were formed. The state emergency management agency joined with several state agencies to coordinate response and recovery activities following the disaster declarations. Initially, the groups were formed for mitigation purposes but served as a useful forum for coordinating mitigation, individual assistance, and infrastructure projects with other program areas to find useful solutions. Minnesota used the long-range recovery group concept; Illinois developed an interagency mitigation advisory group, and Wisconsin also convened a state interagency mitigation group. These groups proved extremely valuable for leveraging funding from a variety of sources to accomplish recovery and mitigation. The Illinois and Minnesota interagency groups have functioned as a coordinating group in several disasters in these states since the Midwest flood in 1993.

~ A major issue that arose from the Midwest floods is the use of levees, repair, and improvement of levees following a major flood disaster. This flood showed the vulnerability of flood control projects. The recovery process also demonstrated how difficult it is to come to a satisfactory solution with regard to replacing these flood control measures. A levee task force was organized to address the many issues arising from the 1993 floods. As a result of the task force recommendations, updated policies govern the use of disaster recovery funds for levee replacement and repair.

~ An issue that became apparent in affected communities throughout the area is that community infrastructure must be maintained in order to function when stressed by major flood events. Drains, ditches, flood protection facilities, and even basic infrastructure that are subject to inundation must be maintained or they fail when subjected to flood stress.

BACKGROUND:

On the last day of February 1997, severe storms spread across the state of Ohio dumping between 6 and 10 inches of rain. The entire state was under a flood watch, with many areas under flood warnings.

As a result of the rains, soil conditions across the state were extremely moist. The National Weather Service reported that the Ohio River would crest at 61 feet from Scioto County to 65 feet in Hamilton County by March 6. That equaled between a 25-year and a 100-year flood event in certain areas. Many of the same communities that had been included in 1996 presidential declarations were flooded even more seriously in this event. Rainfall in excess of 10 inches resulted in stream flooding and runoff and flooding along the Ohio River.

Evacuations along the Ohio River exceeded 3,000 persons. Five deaths and numerous serious casualties resulted from this flooding event.

On March 3, as a result of the severe storms and flooding, Ohio's Governor Voinovich requested a disaster declaration for Individual Assistance. The incident period began on Feb. 28 and continued through March 4. On March 6, the governor amended his request to include Public Assistance (infrastructure) and Mitigation assistance.

On March 4, Ohio was declared a major disaster area. A total of 18 counties were determined eligible for Public Assistance funding for damaged infrastructure and Hazard Mitigation Assistance. Seventeen counties were eligible for Individual Assistance.

A disaster field office was opened in March in Chillicothe, Ohio and closed on May 9, 1997.

ASSISTANCE PROVIDED:

Public Assistance: 408 state, local and nonprofit agency applicants, more than 3,800 damage survey reports, \$39+ million funding

Mitigation: 27 projects for a total of \$9.8 million

Human Services: Housing: 8,364 applications received, 6,256 approved for \$13+ million.

Individual and Family Grants: 5,607 applications received, 2,136 approved for \$9.4 million

LESSONS LEARNED/INITIATIVES:

~ FEMA and the state of Ohio's emergency management agency came up with a unique approach to providing temporary housing assistance under this disaster. Due to the shortage of commercial housing resources, travel trailers were required. Instead of using the FEMA-owned travel trailers, the Region and the State came up with the idea of having applicants rent trailers directly from vendors. Applicants determined eligible for this type of assistance could rent their travel trailers from vendors and be reimbursed by FEMA. To facilitate the identification of suitable vendors, FEMA and the state held "travel trailer fairs" at various locations. These "fairs" allowed vendors to bring their travel trailer units to one location so applicants had the opportunity to compare trailers and prices and arrange leases. This privatized approach saved federal money in terms of the costs of toting, setting up and maintaining FEMA-owned trailer stock. Since the applicants leased the travel trailers directly from the vendors, there was also a cost saving in terms of the length of time FEMA staff needed to be involved in the operation.

BACKGROUND:

The winter of 1996-97 brought record snowfalls and repetitive blizzard conditions to large areas of Minnesota, and resulted in a presidential disaster declaration for snow removal for 55 counties. The rapid melting of the deep snow cover, which began on March 21, 1997, caused extensive spring flooding on virtually all rivers and tributaries throughout the state. An extremely dangerous late winter storm brought heavy snow, freezing rain and blizzard conditions to large areas of the state on April 5 to 7.

Spring floods, exceeding what historians had recorded, damaged homes and businesses in the northwestern section of Minnesota. These horrendous weather problems caused disastrous flash flooding. Homes and communities were inundated and key portions of the infrastructure were damaged or destroyed. Massive power outages resulted in disruptions to water, sewer and heating systems and the closure of major transportation corridors. These unprecedented and devastating conditions virtually paralyzed large areas of the state.

On April 8 Minnesota's Governor Carlson requested a major disaster declaration. On that same day, President Clinton declared a major disaster for 21 counties. By June 10, a total of 59 counties were declared eligible for Individual, Public and Mitigation assistance.

One of the most severely impacted areas was East Grand Forks, which lies across the river from Grand Forks, N.D. Over 10,000 people were evacuated and 90 percent of the city of East Grand Forks was flooded. East Grand Fork water and sewer systems were shut down.

A disaster field office was opened April 14 in Minneapolis. The facility was not situated near the most heavily impacted areas, but the decision to locate the disaster office in Minneapolis was based on the lack of housing resources in East Grand Forks. An additional factor in choosing the field office site was because the space in Minneapolis was provided at no cost to FEMA by the Bureau of Mines. The decision not to have a field office in the East Grand Forks area freed all available housing for the disaster victims. A small, satellite field office was opened in Crookston, Minn., just a few miles from East Grand Forks. This facility dealt with local issues and provided oversight during the construction of two temporary mobile home parks. The disaster field office closed on Sept. 12, 1997.

ASSISTANCE PROVIDED:

Public Assistance: 97 applicants from state, local and eligible nonprofit agencies; 6,100 damage survey reports for \$190+ million in funding

Mitigation: 55 projects for \$29+ million

Human Services: Housing: 10,005 applications received; 8,000 approved for \$17+ million;

Individual and Family Grants: 7,532 applications received, 3,642 approved, \$7.6+ million disbursed

LESSONS LEARNED/INITIATIVES:

~ A new accelerated acquisition process allowed buyout offers to be made to East Grand Forks residents within 100 days of the declaration. The Region V mitigation team received Vice President Gore's Hammer Award for their efficiency in administering the Hazard Mitigation Grant Program during this response effort.

~ The Minnesota Long-range Recovery Task Force was active during the recovery process for this disaster. The continued use of this interagency group proved again the benefits of multiple agency participation in the recovery process. Funds from many sources could be leveraged to address solutions that otherwise might not be presented.

~ Environmental reviews were required on a number of major projects, due to changes sought by the applicants. In some cases, the review of floodplain management criteria required flood-proofing or replacement of the facility. These elements became apparent during a late, but thorough, environmental review. The lesson learned is that environmental evaluations should be conducted from the beginning of the project review process. A new process provides this through a special consideration review in the national emergency management information system. Environmental issues such as historic preservation, impact on endangered species and other concerns are treated expeditiously.

BACKGROUND:

On Sunday, March 29, 1998 a Level 3 tornado, 1.2 miles wide and with winds in excess of 150 mph, struck the city of Comfrey in Brown County and then moved through Hanska. The tornado continued through Nicollet, LeSueur and Rice counties severely affecting the city of St. Peter. The tornado caused one fatality and 16 persons were hospitalized; three in critical condition. Over 90 percent of the 2,500 homes in St. Peter sustained damage, with more than 20 percent of them destroyed. Electrical power to the city was lost and only limited telephone service was available. In addition, the tornado damaged some anhydrous ammonia tanks and a large above-ground fuel storage tank, initiating a hazardous material response.

On March 31, Minnesota's Governor Carlson requested a disaster declaration for the stricken area. On April 1, a major disaster was declared for Individual, Public and Mitigation Assistance, as a result of severe storms and tornadoes. A total of seven counties were determined eligible for federal assistance.

A disaster field office was established in Minneapolis on April 5 and closed on May 1.

ASSISTANCE PROVIDED:

Public Assistance: 49 state, local and eligible nonprofit agency applicants, 390 damage survey reports, \$41+ million funding obligated

Mitigation: 10 projects for \$3.5 million

Human Services: Housing: 1,359 applications received; 322 approved for \$313,000; Individual and Family Grants: 937 applications received; 246 approved for \$666,000

LESSONS LEARNED/INITIATIVES:

~ The travel trailer operation was run by the state. The state emergency management office used the National Guard to perform and manage the mission. FEMA personnel served as technical advisors to the site inspectors. FEMA Region V staff functioned as housing advisors by determining eligibility of applicants registered for travel trailers. The housing advisors identified applicants who were out of their homes and were having difficulty locating an alternate place to live. FEMA staff also monitored trailer occupants' efforts toward obtaining long-term housing. The state received reimbursement for all costs associated with administering the mission.

~ This disaster was one of the first instances in Region V that demonstrated the need for a debris operations coordinator. The debris operations in the towns of Comfrey and St. Peter required much negotiation between the applicants and state and federal emergency management staff to reach agreement on appropriate costs and eligibility.

~ The tornado caused much damage to a historic section of the town of St. Peter. The recovery program at first proceeded to estimate damage and repair without regard to historic preservation techniques. However, consultation with the state historic preservation officer provided a means to effect recovery and preservation in the same process. The lesson learned is that early contact with the state historic preservation officer facilitates efficient and thorough disaster recovery while preserving the historic value of the community and facilities.

~ The use of an insurance expert was determined to be especially helpful to both FEMA and the state - and also to the applicant. Many questions about insurance coverage, what could be claimed and what could not be claimed, were addressed by an insurance technical assistance contractor. In a number of instances, the technical assistance contractor was able raise applicant

awareness of different types of coverage, or coverage that was not identified by the applicant's claim agent. This resulted in payment of much of the recovery costs without resorting to federal or state disaster funds.

Disaster: Ohio Severe Storms

DR-1227-OH

BACKGROUND:

A line of severe thunderstorms moved through central and eastern Ohio on June 26, 1998. Intense amounts of rainfall saturated the ground, causing streams and rivers to overflow their banks. Thousands were evacuated from homes.

Particularly hard hit were areas of Noble, Meigs, Guernsey and Washington counties.

On June 29, Ohio's Governor Voinovich requested a major disaster declaration for severe storms, flooding and tornadoes that occurred beginning on June 24. The initial request was for four counties for Individual, Public and Mitigation Assistance. On June 30, President Clinton declared a major disaster. The declaration was later amended and a total of 23 counties were eventually determined eligible for assistance.

ASSISTANCE PROVIDED:

Public Assistance: 397 state, local and eligible nonprofit agency applicants; 2,767 damage survey reports, \$29+ million disbursed

Mitigation: 18 projects for \$4.7 million

Human Services: Housing: 5,959 applications received, 4,158 approved for \$7.7+ million;

Individual and Family Grants: 3,560 applications received, 1,342 approved for \$4.7+ million

LESSONS LEARNED/INITIATIVES:

~ Because no temporary housing resources were available, it was determined that travel trailers would be necessary. An agreement was drafted wherein the state purchased travel trailers and ran the program with FEMA staff providing technical assistance.

Alternate Teleregistration Center: Columbus, Ohio, 1992

In 1992, Region V was operating a centralized disaster field office in Columbus, Ohio, serving multiple disasters. At that time, applicants for human services programs phoned a toll-free teleregistration number in Denton, Texas to apply for federal assistance. In the fall, Hurricane Andrew hit Florida and created an overwhelming surge of calls to the Denton teleregistration center. Immediate action was needed to provide timely and effective customer service to disaster victims calling to register.

Region V volunteered to open a phone bank in a large, unoccupied space adjacent to the Columbus disaster field office. It was a risky pilot project, since it had never been tested or attempted before. The objective was to provide a relief mechanism for the Texas teleregistration center. Arrangements were made for office equipment, communication experts to set up the phone lines, management staff to run the center, and phone staff to answer all the incoming calls. Region V developed a management plan to identify how to train staff and run the new facility. Within a few days, hundreds of employees were hired to support the phone bank.

With staff assistance provided from various federal and state entities, as well as local hires, the Ohio phone bank was in operation less than one week after its inception. Federal and state officials served as initial managers and staff to answer the phones. This critical cooperation helped achieve immediate success of the alternate phone bank initiative.

The alternate teleregistration facility was so successful in providing the agency with good customer service that it became the model for a second permanent teleregistration center in Berryville, Va. Region V's willingness to take a risk and lend a helping hand during a national crisis was fully supported by FEMA. Director Witt realized the favorable impact of increased teleregistration capacity and the agency institutionalized the concept at Berryville to better serve applicants during multiple or large-scale disasters.

The main teleregistration center remains in Texas, but there is also an alternate center for addressing surge requirements. Since its inception, the alternate center has been the key to quick, customer-service-orientated disaster recovery efforts. In fact, this initiative was institutionalized so rapidly that the alternate center concept was being used within months of the Ohio facility's unveiling.

REGIONAL INNOVATIONS

Catalyst for Nationwide Mitigation Projects

Great Midwest Flood of 1993

Minnesota (DR-993-MN), Wisconsin (DR-994-WI), and Illinois (DR-997-IL)

Prior to the Great Midwest Flood of 1993, there was less focus within the agency on mitigation – measures to decrease or prevent damage from future disasters. However, following the catastrophic flood event, FEMA was instrumental in bringing the word *mitigation* into everyday vocabulary.

Structural mitigation refers to man-made alterations (levees, dams, and channels) to the natural environment in order to prevent damage. Non-structural mitigation alternatives include acquisition or relocation of damage-prone property, elevation or flood-proofing of buildings at risk, rural land easements, and acquisition and restoration of wetlands.

In 1993, support and additional funding were available through the Hazard Mitigation and Relocation Assistance Act.

Region V emphasized mitigation projects in the recovery effort and supported Director Witt's priority of acquiring vulnerable properties and relocating people out of the floodplain. Region V focused on non-structural mitigation - elevation of flood-prone structures, or acquisition and relocation of those buildings out of the floodplain. The three states impacted by the flood also embraced Director Witt's direction and accepted the idea of mitigation, focusing on acquisition. This decision by the states to *voluntarily* support acquisition is the only method by which relocations can be accomplished.

The region developed policies and procedures for the first implementation of statewide acquisition projects with funding from the FEMA Hazard Mitigation Grant Program. These policies and procedures became the catalysts for future acquisitions by providing states all over the nation with invaluable direction and guidance for subsequent flood disaster recovery efforts. The newly developed policies and procedures also provided FEMA headquarters with a prototype for developing the "Property Acquisition Handbook for Local Communities." The handbook provides the nation with a consistent method of implementing acquisition projects and has been widely accepted by both states and communities.

The states have now taken acquisition one step further by utilizing it to reduce and eliminate repetitive loss properties. The success of acquisition projects following 1993 is apparent by the increased and continued effort given to mitigation efforts, region-wide and nationwide.

The Great Midwest Flood of 1993 – Interagency Advisory Groups

Illinois (DR-997-IL), Minnesota (DR-993-MN), and Wisconsin (DR-994-WI)

Following the Great Midwest Flood of 1993, three states in Region V created interagency advisory groups to provide a systematic clearinghouse to address the post-disaster recovery and long-term recovery efforts. These advisory groups included a multitude of state and federal agencies, varying from economic development, to pollution control, to health and human services. The Illinois Interagency Mitigation Advisory Group has 22 state and federal participating agencies. The Minnesota Recovers disaster task force has 15 state and federal

participating agencies. The Wisconsin Interagency Disaster Recovery Group has 11 state and federal participating agencies.

The purpose of the advisory groups was to assist local governments, prevent duplication of funding and recovery efforts, identify and prioritize mitigation projects, and accelerate the application approval process for disaster recovery projects - including mitigation projects. These goals were achieved, in part, because the individual group members had decision-making authority for their respective agencies. These empowered members enabled the group to discuss recovery projects and identify which agency could or could not fund a project. All the policies of the varying agencies were open for discussion, and the decision-making process to match appropriate agencies with recovery projects was greatly facilitated.

The recovery process was also expedited by the fact that many agencies developed common or joint documents. This was a new way of doing business for a number of agencies. These common documents allowed the communities to submit one application to most of the agencies, thereby streamlining the application process. Most of these groups called their services a "one-stop shop" for communities.

The success of all three groups was evident when the governors institutionalized the groups, either through agency agreements or executive orders. These groups continue to establish disaster procedures to expedite efficient multi-agency coordination. In fact, the groups have been meeting almost monthly since their 1993 inception, and all three states have used the groups in subsequent disasters. Today, five out of six of the Region V states have developed and institutionalized interagency advisory groups. In addition, participating agencies now use the groups to; 1) coordinate agency-specific projects to prevent duplication and 2) assist in developing agency-specific program funding criteria.

Region V's participation in these groups promoted coordination within FEMA itself by having both Response and Recovery and the Mitigation Divisions represented on the advisory groups. By having mitigation, infrastructure, and human services staff on the groups, the region was able to streamline the application reviews by identifying which division would be better able to provide recovery assistance to specific communities.

Village of Valmeyer Relocation

Great Midwest Flood of 1993 (DR-997-IL)

In 1993 the entire town of Valmeyer, Ill., was inundated by floodwater. In an effort to maintain the fabric of the community, the 900 residents of Valmeyer agreed to move the entire town rather than disperse and move separate ways.

The village relocated three miles away to higher ground on a bluff. A combination of funds was used including the FEMA mitigation grant monies, administered by the Illinois Emergency Management Agency; the Illinois Department of Commerce and Community Affairs; and the Economic Development Administration. The new town included hundreds of houses, a downtown area, churches, a light industrial area, a fire station and a post office. The new, multi-million dollar school was built using FEMA infrastructure funding. Coordination with the Department of Energy enabled the village to be designed so it is environmentally friendly. Sustainable development measures were used, such as passive solar power for the Village Hall. In fact, the local acronym for the new Valmeyer was VISIONS: Valmeyer Integrating Sustainability Into Our New Setting.

The new Valmeyer overcame a number of development obstacles. The village dealt with probate issues when buying the land, archaeological findings from early Native American settlements, mineral rights, and karst topography (an area of irregular limestone in which erosion has produced fissures, sinkholes, underground streams and caverns). However, through continued coordination with several federal and state agencies, the new Valmeyer became alive with residents. In fact, some of the homeowners from the county area also moved into the new Valmeyer.

The old Valmeyer land was acquired almost in its entirety and the acreage is now dedicated to open space. The lagoon has become the community fishing pond. The agricultural land in the county is slowly creeping towards the former site of Valmeyer, but for now the land is open space.

Valmeyer was also the last acquisition project across the nation to use existing National Flood Insurance Program funding for buyouts. Now the FEMA mitigation grant program is used as a primary funding vehicle for buyouts; Valmeyer used both funding sources to acquire all the homes in the 1993 buyout.

City of Darlington Floodproofing Project

Great Midwest Flood of 1993

Wisconsin (DR-994-WI)

When the small community of Darlington, Wis., was inundated in the Great Midwest Flood of 1993, community leaders decided enough was enough. After experiencing flooding in 1950, 1959, 1969, and 1990, the city officials, citizens and business owners decided they could no longer sit by and let nature decide the future of their community. The mayor stated "the preservation of our past is an investment in our future". The downtown area of Darlington is recognized for its historical significance, and the flood damaged many of those historic buildings.

The city developed a comprehensive flood mitigation plan that detailed a downtown rehabilitation and flood mitigation project. The multi-year project combined historic rehabilitation with innovative floodproofing techniques. Instead of moving the central district, the project included in-place floodproofing and rehabilitation of 35 buildings in the downtown area listed on the National Register of Historic Places. The floodproofing involved filling in the basements and raising the first floor within the building, giving the appearance of no structural change. This method of mitigation was possible because of the high ceilings in the historic buildings.

The unique floodproofing of the historic buildings earned the city a Historic Preservation Achievement Award from the State Historical Society of Wisconsin on May 9, 1998. The city was recognized for achieving a significant feat by floodproofing the buildings while maintaining their historic significance. A video featuring the Darlington floodproofing project was produced and distributed to FEMA regions and headquarters. The video has been shown at the national conference for the floodplain managers'

association and is widely used as a reference guide on floodproofing.

Darlington serves as a model community for sustainable development, and the Darlington project is a prime example of what can be achieved by long term planning and cooperation among city officials, local business owners and concerned citizens. The project was a cooperative effort by

many agencies including FEMA, Wisconsin Emergency Management, the state historical society, Wisconsin Departments of Natural Resources, Administration, and Commerce; Economic Development Administration, and Southeast Wisconsin Regional Planning Commission.

Elevation Workshop and Compendium of Structures

Great Midwest Flood of 1993

Illinois (DR-997-IL)

Following the Great Midwest Flood of 1993, several communities in Illinois received funds for approximately 200 homeowners who wanted to elevate their primary residences to a height where the buildings would be less vulnerable to rising water. In an outreach effort, a traveling workshop was arranged to reach all the homeowners participating in the grants.

The workshops were very effective in providing the homeowners with valuable information on elevation options and techniques that allowed them to make intelligent decisions regarding their homes.

After reviewing the information, 50 homeowners decided that elevating their homes provided their best solution to the flooding problems in the area. The other 150 residents chose to relocate – voluntarily allowing their property to be acquired for open land - and moving elsewhere. The agencies involved in funding were able to be flexible and accommodate the wishes of the homeowners.

To document the 50 elevated residential structures, Region V collected the data necessary to produce the "Illinois Compendium of Elevated Structures." The purpose of the compendium was threefold:

- It served as an initial step in evaluating the overall elevation program following the Midwest flood of 1993.
- It served as a monitoring tool over the life of those 50 structures.
- It documented success stories for other homeowners to follow.

The compendium includes photographs of each structure and the property address, type of elevation, the cost of elevation, grade and elevation information, National Flood Insurance Program community information, and the local floodplain ordinance administrator.

Statewide Exclusive Teleregistration

California (DR-1044-CA)

In massive flooding during January 1995, the declared disaster area consisted of counties stretched along the entire state of California. Region V was called to assist with the disaster recovery because of the magnitude of the problem and the need for additional staff support in Region IX.

A statewide teleregistration method for disaster assistance was implemented. Director Witt made an executive decision to implement exclusive teleregistration on a statewide basis for the entire disaster. This was the first time, on a large-scale disaster, that no disaster application

centers were used and teleregistration was the primary method of applying for assistance. All applications for disaster assistance went through the FEMA teleregistration center in Denton, Texas.

This new approach eliminated the need for disaster application centers in more than 50 California counties, saving millions of dollars in facility and personnel costs. The teleregistration process made it easier on the disaster victims by allowing them to file an application from their home telephone. There was no standing in line waiting for an available registration table. No applicant complained of language barriers using the teleregistration method and it proved to be very successful. This method also allowed the disaster checks to be mailed more quickly and the check disbursement speed grew exponentially almost daily.

The initiative of using teleregistration exclusively for applications made the process very user-friendly. It was such a success that Director Witt institutionalized it for future disasters.

Emergency Tornado Shelter for Wisconsin Community (DR-1131-WI)

On the evening of July 18, 1996, the village of Oakfield, Wis., was rocked by a massive tornado registering F5 on the Fujita scale of wind intensity. Tornadoes of this strength are considered unusual, especially in the upper Midwest. Peak winds reached 265 miles per hour, moving buildings off their foundations, destroying cars and trucks but miraculously taking no lives. One of the buildings destroyed was the Oakfield Middle School. The area was declared a disaster on Aug. 2, 1996.

In an effort to provide an enhanced tornado protective area, the Oakfield Middle School was rebuilt using mitigation measures to strengthen the building during future wind events. The school project, funded through FEMA's Hazard Mitigation Grant Program, involved hardening the walls of the new school with concrete-reinforced masonry construction, using pre-cast concrete roof members, and strengthening the exterior bearing walls. The roof was welded to plates embedded in the wall to tie the roof into the structure more securely. These construction practices will allow the school building to withstand winds up to 150 mph, comparable to an F2 tornado.

The improved school now serves as the community-wide enhanced tornado protective area. It provides an emergency community shelter for 450 students and numerous school staff. The school is also available to hundreds of area residents during non-school hours as a shelter from severe weather.

Windstorm Mitigation Manual

Illinois (DR-1110-IL), 1996

The city of Urbana, Ill., is on the perimeter of "tornado alley." As a result of a 1996 tornado in the area, it was evident that more than 80 percent of the damage occurred from peripheral winds. Because severe wind is prevalent throughout the area and new home building was on the rise, it was decided a manual would be an effective mitigation tool to educate the public on wind-resistant construction.

The "Windstorm Mitigation Manual for Light Frame Construction" was developed to explain how to build a home to withstand high winds. This manual is the first of its kind to focus specifically on winds in the Midwest. The manual was a product of a collaborative effort between FEMA Region V, the Illinois Emergency Management Agency, the University of

Illinois School of Architecture's building research council, and State Farm Fire and Casualty Company; representing a partnership of government, academia, and private industry. State Farm uses this manual to train adjusters and agents.

Urbana has been innovative in mitigation activities and many of their initiatives promote the *Project Impact* goals of building disaster resistant communities. For instance, the city supported wind-resistant construction by offering a building permit rebate on new construction using the measures recommended in the manual. The city continues to work with code enforcement organizations, such as the building officials and code administrators, to develop wind-resistant construction standards and practices.

A training video of the wind-resistant construction process was also prepared for distribution in Illinois and the Urbana area. Funding for the video came from various agencies and organizations, including the Institute for Building and Home Safety. Now the video is available through a number of professional and trade journals.

To illustrate the techniques and fastening materials, a number of demonstration houses were constructed in the city. One of the wind-resistant demonstration homes was featured in the 1997 Champaign-Urbana Showcase of Homes. An on-site display showed the wind-resistant construction features of the home and outlined the permit rebate program. The showcase was attended by more than 12,000 people, the largest crowd ever recorded for the event.

The manual has been distributed nationally and the measures identified in the manual have been used in various communities across the state. With assistance from Simpson Strong Ties Inc., an accompanying manual has been prepared addressing the technical aspects of structural ties.

These manuals are used in a series of company training workshops. Both manuals continue to be an educational tool used by building industry groups and related organizations.

East Grand Forks Accelerated Acquisition Project

Minnesota (DR-1175-MN)

As a result of heavy snowfall during the winter and quick snowmelt in the spring, the Red River of the North experienced a record flood in April of 1997. The city of East Grand Forks, Minn., was flooded almost in its entirety, with only one percent of the buildings being spared any damage. The area was declared a disaster on April 8, 1997. It was clear that an acquisition program would need to be considered. However, the geographic location of the town, in northwestern Minnesota, allows only a short building season. Therefore, an accelerated acquisition process was needed to enable flood survivors an opportunity to rebuild before the next winter.

To accomplish this fast-track acquisition project, FEMA, the Minnesota Division of Emergency Management, and the governor's appointed Minnesota Recovers disaster task force all coordinated their efforts. One month after the disaster declaration Region V staff met to discuss and develop an accelerated acquisition program. After two days of program development, the plan was presented to the state. The state approved and supported the innovative acquisition program within one week.

The city of East Grand Forks received acquisition project approval for \$11.4 million to acquire 407 properties within 75 days after the disaster declaration. FEMA and the state worked closely with the state historic preservation officer to expedite a historic review to assure that no homes proposed for acquisition were on the National Register of Historic Places. The Minnesota Department of Administration also shortened the contracting process for acquisition contractors

to less than half the normal approval time. The city had been proactive and had appraisals ready for review and title work underway.

The multi-level coordination and accelerated approval process allowed the city to make its first buyout offer on August 4, less than four months after the disaster was declared. By the end of the year, almost all of the 407 properties had been closed.

This acceleration program provided the disaster survivors immediate funding sources with which to relocate. It was the first time in FEMA history that such a large number of acquisitions had been completed in such a short time frame.

State Involvement in Manufactured Housing Programs

Minnesota (DR-1212-MN) and Ohio (DR-1227-OH), 1998

In 1998, after disasters were declared for Minnesota tornadoes and severe storms in Ohio, travel trailers were used to provide housing to disaster survivors. However, in these disasters, the states took a more active role in the housing mission.

In Ohio, FEMA provided funds that were used by the state department of development to purchase, install, maintain and remove travel trailers. Titles for the units remained with the state and the state agreed to use the units for disaster victims in subsequent declared or non-declared disaster events. Local community action agencies helped victims develop long-term housing plans and move out of the travel trailers. The trailers were then stored for future needs. In fact, several of them were used after floods in March 2000 to house victims of another disaster declaration (DR-1321-OH).

In Minnesota, travel trailers were also utilized. The trailers had been deeded to the state after an earlier disaster (severe flooding, DR-1175-MN) and had been distributed to county emergency management offices. FEMA again provided funding for program operations. The Minnesota National Guard was given the mission of contracting for moving, installing, maintaining and removing the units.

In both cases, there was a strong partnership between FEMA, the state and the affected communities. Director Witt's decision to involve state organizations in the disaster housing program is one way to further develop state capabilities and it worked successfully in the Ohio and Minnesota disasters.

Project Impact Minnesota Managing State Pilot: Fiscal Year 2000

The Minnesota Division of Emergency Management (MNDEM) has signed a Memorandum of Understanding with FEMA to implement the *Project Impact* Managing State Pilot for federal fiscal year 2000. The purpose of the pilot is to build a FEMA-state collaborative partnership for the implementation of *Project Impact*. The memorandum primarily changes the roles and responsibilities for accomplishing program requirements by shifting responsibility for contracting and reporting from the *Project Impact* community to state emergency managers. MNDEM administers the *Project Impact* disaster resistant community grant. The state emergency management agency has established a *Project Impact* state steering committee with the following priorities:

- Provide support to *Project Impact* communities
- Promote mitigation and prevention
- Develop statewide partners
- Establish a mentoring program for non-grant communities
- Develop a marketing strategy
- Develop selection criteria for new *Project Impact* communities

MNDEM, with the support of the state steering committee, has conducted a statewide solicitation of nominees and developed an application form and selection criteria. The agency has also reviewed and ranked the submitted applications, selected communities for fiscal year 2000, submitted a consolidated application and quarterly financial and program narrative reports

(broken out by community), and participated in the evaluation of the managing state pilot program.

Under the *Project Impact* managing state Memorandum of Understanding, Region V reviews, approves and processes the consolidated grant application to the state. The region also submits the Minnesota nominations to FEMA headquarters for approval, reviews quarterly financial and program narrative reports submitted by the state, provides technical assistance to the state or communities, and participates in the evaluation of the managing state pilot program.

The managing state concept streamlines the paperwork to reduce the burden on *Project Impact* communities and enables FEMA to expedite the application approval process by eliminating the need to process multiple grant packages for the individual communities. In fact, the current success of the state steering committee has motivated them to change their scope of work to deal with mitigation and prevention activities statewide. The Minnesota *Project Impact* steering committee has broadened their role and is now the Minnesota Mitigation Advisory Committee. The state management concept is providing the most effective means of program and financial coordination within the communities.

REGION VI

EXECUTIVE SUMMARY

The deadliest act of domestic terrorism in U.S. history—the 1995 Oklahoma City bombing—underscored the need for solid emergency management and preparedness. The nation must be ready for any disaster—whether natural or manmade.

Thirty minutes after the explosion, Oklahoma officials called FEMA, the lead agency in consequence management according to the Federal Response Plan. One hour after gathering facts and addressing critical issues, FEMA Director James Lee Witt was briefed.

Oklahoma's final report on the entire operation repeatedly praises the smooth and unprecedented cooperation between local, state, and federal government. By working closely with all state and local partners, FEMA has changed the way America deals with disasters.

Based on history, Texas ranks third on the list of states at highest risk for disaster. Chief catalysts include floods, hurricanes, and tornadoes. Arkansas, Louisiana and Oklahoma face a medium risk for disaster. In Region VI, only New Mexico is at a statistical low risk for disasters. But disasters tend to ignore statistics as the devastating fires in Los Alamos, New Mexico demonstrated in May 2000.

Manmade and natural phenomena, such as those listed below, make Region VI uniquely vulnerable to future disasters.

The greatest cluster of oil and gas plants in the Western Hemisphere runs from Baton Rouge to New Orleans—commonly called 'toxic alley.' The third greatest cluster flanks the Houston Ship Channel—once known as the nation's most polluted waterway.

An Army depot in Arkansas stores the nation's second largest stockpile of chemical weapons, mostly mustard gas and nerve agents, sealed in warheads and landmines.

At the western edge of "tornado alley," Texas tops the list of states with the greatest number of recorded tornadoes, followed by Oklahoma.

America's only nuclear weapons assembly and disassembly plant is in Amarillo, Texas.

The world's first nuclear waste disposal site opened in New Mexico in 1999—and a major transportation route for incoming shipments of nuclear waste from the east cuts right through Texas.

KEY DISASTERS

SUMMARIES

At its busiest, Region VI handled nine major disasters during Fiscal Year 1998, starting with the Houston floods (DR-1245-TX) and ending with Hurricane Bret (DR-1287-TX). That spring, the Region had five disaster field offices open at one time. For Region VI, 15 disasters stand out as key events from 1993 to 2000.

New Mexico Wildfires 2000

On May 4, 2000, the National Park Service started a controlled burn that erupted into the worst forest fire in the history of New Mexico. The Cerro Grande Fire forced the evacuation of some 20,000 people; consumed more than 49,000 acres; and, caused close to \$1 billion worth of property damage—even scorching parts of the Los Alamos National Laboratory, birthplace of the atom bomb.

Under a special law passed by Congress in July 2000, FEMA reimbursed disaster victims for all property, business and financial losses, as well as all other expenses directly related to the fire.

Major Challenges of the 2000 New Mexico wildfires

High winds, hot weather, and dry conditions

Outbreak of wildfires raging throughout the state

Possible threat of radioactive runoff or groundwater contamination

Soil erosion and increased threat of flooding from loss of ground cover

Lessons Learned

Mitigate drought damage

Promote wildfire prevention

Oklahoma Tornadoes 1999

One of the worst natural disasters in recent U.S. history took place May 3, 1999, when a record outbreak of some 70 tornadoes ripped through Kansas and Oklahoma—killing 44 people and injuring 795 in the state of Oklahoma alone.

An F-5 tornado—clocking winds of more than 300 miles an hour—carved a lethal path through Moore, Bridge Creek, and Del City, just south of Oklahoma City. In the town of Mulhall, one twister destroyed 95 percent of the community.

The biggest corridor of damage ran nearly 27 miles long, three-quarters of a mile wide, and contained 1.4 million cubic yards of debris—including dead animals, concrete slabs, building materials, and truckloads of hazardous household waste.

To handle the massive cleanup effort, Region VI brought in a Technical Assistance Coordinator (TAC) and formed a committee made up of FEMA and nearly a dozen other governmental concerns. The committee met frequently to discuss challenges and solutions to critical problems. The debris committee included the U.S. Army Corps of Engineers, under mission assignment by FEMA to hire private firms to clean up debris and demolish destroyed buildings in most of the hardest hit areas. In a few areas, local governments managed debris removal.

The committee developed a one-page, easy-to-read Right of Entry Permit. Property owners could get the form from their city or county government office or their public works department. In another big boon to the recovery effort, the United Methodist Committee on Relief set up a helpline for property owners who needed assistance in moving debris to the right-of-way for easier pickup and disposal. The helpline also served as a matchmaking service—matching volunteers willing to assist those in need with tasks needing to be done.

Major Challenges of the 1999 Oklahoma tornadoes

Debris field clean-up
Environmental concerns

Lessons Learned

Use unified approach to achieve best results
Educate the public on disaster prevention measures
Safe Rooms save lives

Arkansas Tornadoes 1999

During the most destructive January in the country's history, 38 tornadoes touched down in Arkansas on January 21, 1999—setting the record for the greatest number of recorded tornadoes in one state in a single day. The January storms killed seven people and caused an estimated \$1 billion in damages in Arkansas.

Hard hit areas included the historic district of Little Rock—notably the Quapaw Quarter. In the small town of Beebe, tornadoes destroyed two schools.

To assist in the cleanup effort following the tornadoes, Arkansans received \$2.9 million from the U.S. Department of Agriculture's Natural Resources Conservation Service.

Major Challenges of the 1999 Arkansas tornadoes

Debris removal
Historical preservation

Lessons Learned

Promote the importance of Safe Rooms

Central Texas Floods 1998

Catastrophic flooding overwhelmed Central Texas in October 1998, with three areas reporting 15 to 20 inches of rainfall on the first day of a full week of storms. Rain and floodwaters swamped most of San Antonio, the southern part of Austin, and low points in between the two cities. The floods swept through New Braunfels, damaging numerous homes and businesses on the Guadalupe and Comal Rivers. The deluge continued downriver, where record crests inundated the cities of Cuero and Victoria.

Challenges presented by the Central Texas Floods included:

To overcome sizable distance and logistics challenges, Region VI directed its floodplain specialists to gather data on the widespread damage while en route to the disaster field office easily shaving one week off data collection activities.

Facing an overwhelming amount of damage, Region VI trained local officials to use its substantial damage estimator to perform an inventory of damaged property so they could make better floodplain management decisions based on accurate information.

To end the cycle of flooding and rebuilding homes and businesses in flood-prone areas, FEMA encouraged a massive buyout program, with funding through its Hazard Mitigation Grant Program (HMPG). State and local officials earmarked all HMPG funds for DR-1257-TX for acquisition projects—which relocate residents out of harm's way. The FEMA portion of the voluntary buyout program eventually totaled \$19.2 million.

Major Challenges of the 1998 Texas floods

Repetitive loss damages

Long-term housing

Multiple flood events in South Central Texas (DR-1245, DR-1257)

Lessons Learned

Mitigate the suffering and financial losses from repeated flooding

Relocate homes and other properties out of the floodplain

Hurricane Georges 1998

Hurricane Georges—the worst storm of the 1998 hurricane season—killed 600 people in the Caribbean before making a direct hit on the Florida Keys. Next it took aim at New Orleans. Already in Baton Rouge working another federal disaster, FEMA Region VI and its state partners switched their focus to the threat facing New Orleans. Emergency responders shifted into high gear—ordering major evacuations and pre-positioning assets to prepare for the worst. The potential for catastrophe remained high for hours, even though New Orleans had spent years building a complex and intricate network of earthen levees and concrete floodwalls with synchronized floodgates to avert the casualties and property damage wrought by past storms. At a minimum, weather watchers expected 25 inches of rain and hurricane-force winds. But Georges weakened over Gulf waters before making a relatively quiet landfall at Biloxi, Ms. To date, Georges tops the list of FEMA's costliest hurricanes—racking up 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.

Louisiana experienced some damage, but not as much as first feared. Notably, Georges flooded 100 homes and caused about \$2 million worth of damage to flood-prone properties in St. Bernard Parish.

Signifying a sign of solidarity and partnership, the Louisiana Office of Emergency Preparedness (LOEP) published a short article in its spring 2000 newsletter that promotes buyouts of repetitive loss structures.

Major Challenges of Hurricane Georges

Storm surge and heavy rainfall, more than two feet on U.S. Gulf Coast.

Preparations and evacuations

Simultaneous disaster operations

Repetitive loss structures

Lessons Learned

Recognize the importance building and maintaining levees and floodwalls
End the cycle of flooding and rebuilding flood-prone structures

Houston Floods 1998

Tropical Storm Frances, the sixth named storm of the 1998 hurricane season, pounded the Gulf Coast in September of 1998, dumping steady rain on Southeast Texas for more than a week. Most of the property damage came from high tides and severe flooding. Major fish losses occurred weeks later, when the rotting vegetation and the stagnant waters moved back into the freshwater bayous and saltwater bays and choked off the oxygen supply for much of the marine life.

In one significant milestone, Region VI used the streamlined Public Assistance Program (PA) for the Houston floods—marking the first formal implementation of the plan to use mediation techniques to resolve any disputes early in the PA process and thus eliminate appeals.

At its busiest, Region VI handled nine major disasters during Fiscal Year 1998, starting with the Houston floods (DR-1245-TX) and ending with Hurricane Bret (DR-1287-TX). That spring, the Region had five disaster field offices open at one time.

Major Challenges of the 1998 Texas floods

Torrential rain

Storm surges

Multiple flood events in South Central Texas (DR-1245, DR-1257)

Lessons Learned

Mitigate areas affected by high tides

Realize the long-term effect of flooding on marine life

Relocate homes and other properties out of the floodplain

Summary of Hazard Mitigation Grant Program for DR-1245

Acquisition Projects

Total \$6.9M

Del Rio Floods 1998

In late August 1998, Tropical Storm Charley stalled over Southwest Texas, dumping 27 inches of rain on Del Rio over two days. That night a 12-foot high wall of water rose up from the swollen San Felipe Creek and swallowed a whole neighborhood, hurling many unsuspecting residents into the dark floodwaters. The Governor of Texas immediately called out the National Guard, who rescued 51 people from flooded rivers and tributaries throughout Val Verde County. The rising Rio Grande—32 feet higher than normal—continued its southern course. Fearing the worst, hundreds of people evacuated downriver. Officials shut down three international bridges as the surge of water, mud and debris washed past Laredo. Just south of Laredo, flash floods wiped out parts of the Rio Bravo and El Cenizo colonias, unplanned communities along the U.S.-Mexico border.

Back in Val Verde, the death toll stood at 13 people. Another six remained missing. Its list of damages included 1500 homes, 200 mobile homes and 300 apartments.

Besides the physical damage, the floods ripped at the social fabric of the San Felipe Creek community, disrupting the culture of the families who had lived there for more than a century. Residents also faced a shortage of drinking water due to the contamination of Del Rio's water system caused by the flooding. The joint recovery effort included the supply and delivery of potable water for workers and 38,000 residents for more than five weeks. State and local health officials closely monitored the situation and took precautions, such as insisting food servers use only plastic utensils and disposable plates to minimize risk of illness.

To expedite the recovery process, FEMA Region VI completed environmental assessments in as few as 48 hours, versus the standard 90 days to 120 days.

Facing an overwhelming amount of damage, FEMA Region VI flood specialists trained local officials to use its Substantial Damage Estimator software to perform a quicker and more efficient inventory of damaged properties.

To overcome distance and logistics problems, FEMA Region VI field-tested video teleconferencing during recovery operations.

To accommodate the massive recovery effort, the logistics crew rushed to locate the area's only vacant building of substantial size. Then, with help from the Mobile Emergency Response Support Detachment based in Denton, they turned it into a highly functional disaster field office in just 48 hours. The transformation included the installation of a mobile air-conditioning system that pumped cool air through a maze of temporary ducts.

On a national level, FEMA anticipated the need for better and faster information in support of disaster response and recovery and developed the agency's National Emergency Management Information System (NEMIS) to meet that need.

Major Challenges of the 1998 Del Rio floods

Housing shortage

Preservation of historic documents and structures

Health and public safety concerns

Potable water

Lessons Learned

Address housing concerns immediately with all parties working together

Relocate homes and other properties out of the floodplain

Summary of Hazard Mitigation Grant Program for DR-1239

Acquisition Project

Total \$4.5M

Southern Drought and Heat Wave 1998

One of the worst Texas droughts in half a century sparked more than 3000 wildfires across the Lone Star State in the summer of 1998. The fires consumed about 150,000 acres of land and threatened hundreds of homes—prompting an emergency declaration that made all 254 Texas counties eligible for direct federal assistance.

By June 22, burn bans had been issued in 107 counties. Firefighters continued to battle significant fires in 16 counties, with many counties reporting multiple fires and each blaze burning up 100 acres on average.

Firefighting agencies included the U.S. and Texas Forest Services, the Texas Department of Transportation, the Texas National Guard, the Texas Department of Public Safety and many local fire departments. Texas state officials reported three deaths and one injury related to the fires.

Major Challenges of the 1998 drought and heat wave

Dry conditions and high temperatures

Multiple wildfires

Lessons Learned

Mitigate drought damage

Promote wildfire prevention

San Antonio Floods 1997

Severe storms and heavy rains hit Central Texas in June 1997, leaving four people dead and causing numerous flash floods as streams and lakes spilled over their banks. More than 900 homes sustained some type of flood damage, which stretched over 30 counties.

Four cities reported damage to their sewage treatment plants: Frio, Marble Falls, Poteet, and Castroville. Region VI immediately dispatched its recently hired environmental liaison officer to the disaster field office to address questions on runoff, sewage and contamination. FEMA Region VI now routinely dispatches an environmental officer to every disaster, but the San Antonio floods marked the first use of this environmentally sensitive practice in Region VI. To readily address financial issues during the disaster recovery operation, Region VI decided to install a comptroller in the San Antonio disaster field office. The region later wrote standard operating procedures for comptrollers in the field, which were adopted nationwide.

Major Challenges of the 1997 San Antonio floods

Damage to sewage treatment plants in four cities

Flash floods

Debris clean-up

Lessons Learned

Stress the importance of early warning systems

Address environmental concerns immediately

Summary of Hazard Mitigation Grant Program for DR-1179

Acquisition Projects

Emergency Alert System Equipment Purchase Projects

Public Awareness Campaign

Early Flood Warning System

Total \$1.5M

Arkadelphia Tornado 1997

An F4 tornado—packing winds up to 260 miles an hour—cut through Arkansas on March 1, 1997. Nine more tornadoes and severe storms continued to pound the state for four days, leaving

26 people dead and causing millions of dollars in damages. One month later, severe flooding followed a barrage of heavy rain. Arkadelphia bore the brunt of the damage. Overwhelmed by the magnitude of the devastation, the City of Arkadelphia requested FEMA's assistance in evaluating reconstruction strategies and developing a plan to support the community's efforts in rebuilding. Arkadelphia became one of the first communities in the nation where FEMA directly funded the preparation of a long-term disaster recovery plan. Completed in just two months, the initial recovery plan suggested both short-term and long-term actions to rebuild in such a way as to ensure a future for Arkadelphia with a stronger economic base and a better environment for its residents.

Region VI first championed safe rooms in the aftermath of Arkadelphia tornadoes, after receiving numerous requests from local emergency management officials and homeowners who wanted to retrofit an interior closet or bathroom to withstand extreme windstorms and windborne debris. Working closely with mitigation specialists, public affairs launched a public education campaign, suggesting folks build an in-home tornado shelter.

Two years later, the State of Arkansas rolled out a safe room rebate program, offering the first 1,000 homeowners reimbursements of \$1000 each toward the cost of building a safe room.

Major Challenges of the 1997 Arkadelphia tornado

Economic recovery of the Arkadelphia downtown business district

Lessons Learned

Recognize the importance of establishing manufactured housing agreements

Promote the importance of safe rooms

Southern Plains Severe Drought and Severe Texas Fires 1995

From fall 1995 to summer 1996, raging wildfires spread across the parched Texas landscape. More than 25,000 acres went up in smoke. East and North Texas took the brunt of the burn. Dry conditions and killing frosts left an abundance of grasses and foliage as a powder keg—a keg that was ignited by a simple spark from a welder's torch in Montague County.

In Texas and Oklahoma, drought conditions cracked soils and ravaged crops as reservoirs continued to drop. Many Texas cities reported problems caused by the shrinking of soils during the heat wave, which resulted in breaks along water mains and sewer lines.

Major Challenges of the 1995 drought and fires

Low humidity and high temperatures

Multiple fires

Low reservoir levels

Lessons Learned

Alert public to fire prevention responsibilities

Mitigate drought damage

Institute community burn bans early

Louisiana Severe Weather and Floods 1995

Drenching rains and windstorms lashed the southern part of Louisiana in May 1995 and caused widespread flooding. Floodwaters wreaked havoc in New Orleans, making travel in the city

impossible for days by anything other than boat. The disaster declaration covered 12 parishes, the Louisiana equivalent of counties.

With the goal of moving people out of harm's way, FEMA Region VI once more targeted thousands of flood-prone properties for buyouts or elevation. FEMA funding for buyouts following the Louisiana floods of 1995 eventually totaled \$15.9 million.

Major Challenges of 1995 Louisiana floods

Flash flooding

Transportation

Lessons Learned

Mitigate flood damage

Relocate homes and business out of floodplains

Southeast Texas Floods 1994

Without warning in October 1994, a large storm system charged across northern Mexico and marched along the Texas coast to the San Jacinto River Basin north of Houston. Record rainfalls of some 30 inches fell on the basin over four days, filling or spilling from 37 tributaries. The San Jacinto River reached a record level, just shy of 27 feet and more than seven feet above its previous high.

When all that water rushed back to sea level at Galveston Bay, the tidal surge exhumed pipelines around the river trunk and dislodged barges in the shipping lanes. The sheer force of the surge caused many pipelines to rupture, resulting in leaks and evacuations and a series of fires and explosions. Many folks in Houston still talk about "the time the channel caught fire."

Nearby Montgomery County experienced its heaviest flooding in 500 years. Twenty-six counties in the eastern part of the state were deemed eligible for federal aid. The 1994 floods severely damaged or destroyed more than 15,000 buildings, including homes, schools and businesses. Officials counted more than 20 flood-related deaths.

Once urgent needs were addressed during the joint recovery effort, federal, state, and local partners assessed the risks, studied their options, and looked for ways to mitigate future damage. Repetitive flooding from torrential rains continues to plague the area, given that its topography is relatively flat, ranging from coastal salt marsh and sand flats along the bay shoreline to gently rolling coastal prairie in the northern and western portions of the county.

Authors of an \$800,000 study of toxic contamination of the Houston Ship Channel concluded that the only sure way to prevent flooding along meandering rivers would be to control the rate or amount of rainfall in any given area. No amount of flood control measures could have prevented the 1994 flood—it simply rained too much in too short a period of time.

Since then, the Harris County Flood Control District has constructed numerous channel improvement projects that have reduced flooding in the county. Harris County and the Cities of Houston, Bellaire and Webster participate actively in the National Flood Insurance Program. In addition to locally sponsored and federal flood control projects, Harris County and the City of Houston also sought to remove properties from repetitive flood loss areas through acquisition. In response to the Great Midwest Floods, Congress passed the Hazard Mitigation and Relocation Assistance Act in December 1993, which increased FEMA funding for the purchase of structures in floodplains. The Southeast Texas Floods of 1994 marked the first use of the buyout program for Region VI. The FEMA portion of the acquisitions totaled \$18.3 million.

Major Challenges

Repetitive flood losses

Household hazardous waste collection

Lessons Learned

Relocate homes and businesses out of flood-prone areas

REGIONAL INNOVATIONS

INNOVATIONS

Region VI played a key role in improving emergency management and recovery operations at FEMA. The region rightly claims hundreds of innovations, which fall under six headings: Damage Prevention, Reinvention, Partnership, Customer Service, Rapid Response, and Risk Reduction. The top 50 innovations are listed below, separated by heading.

DAMAGE PREVENTION

With the goal of reducing the effect of natural disasters on individuals, homes, communities, and the economy, mitigation is the cornerstone of emergency management. Preventive measures include: keeping homes away from floodplains, engineering bridges to withstand earthquakes, and promoting the adoption and enforcement of sound building codes and construction practices. FEMA routinely works with state and local governments, professional groups, and the public to reduce or eliminate the risk to people and property from floods, earthquakes, hurricanes, and other natural forces. Examples of mitigation innovations from Region VI include:

Arkansas Landslide Study

In 1832, President Andrew Jackson made Hot Springs National Park the first federally protected reservation in the nation's history. Hot Springs National Park sits in a small city surrounded by low-lying mountains near central Arkansas.

After a long history of destructive rock falls and landslides—including the killer landslide behind the Hot Springy Dingy in 1995—present day leaders proposed a concerted effort to protect its people and property.

In 1996, at the city's request, FEMA Region VI conducted a landslide study of downtown Hot Springs. Through a technical assistance grant made possible by FEMA's Pre-Disaster Mitigation Fund, mitigation specialists scrutinized the landscape framing the 20-block area. They mapped 6,000 linear feet of slope and studied the scarp faces, looking for geomorphic warning signs, such as tilting trees, poles, or walls. The study ran from November 1996 to July 1997.

FEMA identified 13 high-risk areas, including a bank, a hotel and a parking lot. The final report also proposed corrective measures to stabilize the rock walls, prevent slope failure, and reduce exposure to disaster losses—specifically calling for steel traps, ground anchors, drainage ditches, retention structures, and other proven holding techniques.

The authors of this landmark study estimated the cost of adequately mitigating damages at \$2.8 million. Hot Springs continues to identify funding sources.

Building Code Change Assistance

FEMA cannot mandate that communities upgrade building codes, but the agency can encourage protective codes by educating the community about the benefits of establishing and enforcing strong building codes. Following a tornado-induced disaster in Ft. Smith and Van Buren in April 1996, Region VI Director Young participated in a news conference about the recovery effort underway in Arkansas. Five minutes into his briefing, Young pulled a hurricane strap from his back pocket and talked about the benefits of tying down roofs. This simple visual noticeably held the interest of the audience.

Seizing an opportunity, FEMA quickly scouted neighborhoods in Van Buren looking for undamaged houses that used hurricane straps, then called the media to show their proven

effectiveness. During an interview set up with one such homeowner, a next-door neighbor walked over to tell his story.

That story made newspaper headlines the next day: The homeowner pointed at his roofless, waterlogged home as he spoke. He regretted not using hurricane straps, which would have kept the roof on and the rain out of his home. He now struggled with two choices—bulldoze it or rebuild it.

Six weeks later the Van Buren City Council amended its building code standards to include hurricane straps.

Community Assistance Visits

The States of Louisiana and Texas rank first and second in the country, respectively, for the:
Most flood insurance claims,
Greatest amount of claims paid since 1978, and
Greatest number of repetitive loss properties.

To stop harmful floods and drop those shameful rankings, more than 2,000 communities in Region VI signed up for the National Flood Insurance Program (NFIP) as of spring 2000, with nearly 1,000 in Texas alone. Though FEMA works hard to address the needs of all NFIP communities, the growing workload limits the frequency of contact with all communities and continues to tax the limited resources of its floodplain management staff.

Yet history shows that regular visits to local floodplain management officials help prevent compliance problems from occurring and encourage sound floodplain management practices. In a bold move designed to meet a pressing need, Region VI hired a private contractor to conduct Community Assistance Contacts (CACs) and Community Assistance Visits (CAVs). FEMA selected four high flood loss areas for the CAV Pilot Study of 1997: St. Tammany Parish in Louisiana; and Harris County, Montgomery County and the City of Galveston in Texas. The contractor carried out comprehensive audits to assess each community's floodplain management program—documenting the existing floodplain mapping and studies, evaluating violations and flood risk factors contributing to significant flood losses, and developing a flood loss mitigation strategy. Region VI staff used the resulting comprehensive CAV reports to closely track compliance schedules and conduct all follow-up activities, including the notification of pertinent legislative offices of any unresolved field violations.

Mitigation Tools

The Mitigation Division in Region VI uses and continues to develop an extensive collection of tools to train and assist local and state government emergency personnel.

Taking Shelter From the Storm Booklet

In 1995, FEMA, explored the idea of developing design guidelines for in-home tornado shelters, built to withstand extreme windstorms and wind-borne debris.

After consulting with Dr. Kishor Mehta, director of the Wind Engineering Research Center at Texas Tech University in Lubbock, Lee submitted a Statement of Work to FEMA headquarters in September 1995. FEMA carried out a feasibility study and secured funding for the proposed upstart—the first tornado protection program at FEMA.

The resultant publication, *Taking Shelter From the Storm: Building a Safe Room Inside Your House*, draws on 25 years of field research by Texas Tech researchers. They looked at the

performance of buildings following dozens of tornadoes throughout the United States and tested the penetration resistance of construction materials hit by airborne debris.

In October 1998, FEMA published the first edition of the 25-page illustrated book, which includes free construction plans and cost estimates. (FEMA made advance copies of the publication available at a National Tornado Forum in August 1998.) After a record outbreak of tornadoes ripped through the nation's heartland in May 1999 (DR-1272), Region VI launched the Safe Room Initiative, which heavily pushed *Taking Shelter From the Storm* and carried the message: *Safe Rooms Save Lives*.

REINVENTION

Disasters are costly both financially and emotionally. FEMA initiated many changes from 1993 through 2000 to rein in the costs of disasters and at the same time provide better service for the people most in need—the disaster victims and devastated communities.

Arkadelphia Recovery Plan

In March 1997, tornadoes and severe storms tore through downtown Arkadelphia, destroying or substantially damaging 239 homes, 45 businesses and 16 public buildings (DR-1162-AR).

Overwhelmed by the magnitude of the devastation, the city requested FEMA's assistance in evaluating reconstruction strategies and developing a plan to support the community's efforts in rebuilding. Arkadelphia became one of the first communities in the nation where FEMA directly funded the preparation of a long-term disaster recovery plan.

FEMA Region VI spearheaded the drive to mobilize resources, coordinate efforts and assemble experts in planning, mapping, surveying, urban design, and economic analysis. Completed in just two months, the initial recovery plan suggested both short-term and long-term actions to rebuild in such a way as to ensure a future for Arkadelphia with a stronger economic base and a better environment for its residents.

Supplementary material:

Arkadelphia Recovery Plan report, June 5, 1997 (item # 7)

Field Operations Facility

After only four weeks of operation out of donated space at a fire station, Region VI closed the Field Operations Facility (FOF) in Monroe, La. (DR-1314) on March 15, 2000. The response team proved that smaller disaster recovery operations could cut costs and maintain the same or better quality of service given to applicants.

DR-1314 marked the fourth time that Region VI successfully completed its mission without incurring the costs of a full-blown disaster field office. The region opened its first FOF in January 1999 to help Louisiana recover from a severe winter storm (DR-1264).

The second FOF opened in Bossier City, La. following severe storms and tornadoes in April (DR-1269). The region sent an advance team to work with state officials, and coordinated operations from the Federal Regional Center (FRC) in Denton, Tx.

The region set up the third FOF in the FRC following tornado damage in North Texas (DR-1323).

Fire Suppression Assistance Program

Trends suggest that fire suppression costs will continue to escalate. Fire suppression grants are available for any fire on publicly or privately owned forest or grassland that threatens life, certain property, and/or public health and safety. The grants may also be utilized for preventive programs, and as a supplement to state resources to suppress fires—including expenses for field camps; equipment use, repair and replacement; tools, materials and supplies; and mobilizations and demobilization activities.

In a joint effort with state partners throughout all of 1999, FEMA drafted proposed regulations that would redesign the Fire Suppression Assistance Program (FSAP). Their goal was to clarify, simplify, and expand FSAP.

In the 1990s, Region VI and its state partners developed standard operating procedures on filing a request. The region also digitized the application forms—after much frustration over the deteriorating print quality of paper forms being filled out and faxed back and forth amongst pertinent parties. Forms include principal advisors report, request for fire suppression, application for federal assistance, and state certification of drug-free workplace and restrictions on lobbying.

Disaster Workforce Committee

The agency's most sweeping review of the way FEMA deploys, trains, evaluates and maintains its disaster cadres was submitted to Director Witt in May [1998] and disseminated for comment this summer.

The Disaster Workforce Committee, better known as the "Buddy Study," involved more than 40 employees who developed a series of recommendations. The committee looked at how FEMA manages its disaster workers, including whether they are used in a manner that is equitable, professional and efficient.

More than 4,000 disaster assistance employees belong to 137 different cadres, with 320 job titles. There has been little standardized training even within cadres with similar responsibilities, and no consistent evaluations, hiring patterns, training or accountability. This will change under the committee's recommendations, she said.

Integrating similar headquarters and regional cadres to create agencywide cadres;

Reducing the number of disaster assistance employees by using functional, rather than specialist, position management;

Assigning all employees with disaster responsibilities to a cadre, regardless of type of appointment;

Implementing credentialing and training programs for all cadres;

Designating headquarters and regional cadres managers who will be responsible for jointly developing cadre readiness;

Establishing authorized staffing ranges for each cadre;

Maintaining organization identity for all employees, but making them available for nationwide assignments;

Providing equitable disaster employment opportunities using the automated deployment database;

Compensating disaster reservists comparable to government salary pay levels.

After decisions are made based on the director's review of the comments received last summer, cadre managers and other designated officials will help refine guidance and gradually implement the changes envisioned by the workforce committee.

Environmental Specialist Deployment

At the beginning of the disaster recovery process, FEMA assigns a public assistance coordinator (PAC) to each public applicant, who often needs federal funding to help repair infrastructure, recoup emergency management costs, or replace a damaged public works project. The PAC is a customer service manager who works with the applicant to resolve disaster-related needs and ensure that the applicant's projects are processed as efficiently and expeditiously as possible. Recognizing the importance of the timely resolution of any environmental concerns, FEMA Region VI routinely sends an environmental specialist with the PAC on an initial visit.

Y2K Preparations

FEMA faced one of its biggest technological challenges—the Millennium Bug—on December 31, 1999. Countless media outlets predicted massive computer failures at the stroke of midnight—shutting down power grids, chemical plants, bank operations, transportation hubs, security networks and communications systems. All totaled the United States spent approximately \$100 billion on Y2K repairs and preparations.

To deter potential chaos in the face of a calamity, FEMA directed all regions to develop a Day One Plan.

In support of Y2K preparations at FEMA headquarters, Region VI accepted responsibility for the Federal National Alert Radio System (FNARS) for eight states, expanding beyond regional boundaries.

The Mobile Emergency Response Support (MERS) Detachment based in Region VI also supported Y2K preparations, by routing radio checks and providing telephone backup through the satellite-based Emergency Command and Control Network (ECCN) for FEMA, all 50 states, and U.S. territories.

PARTNERSHIP

Regional Response Plan

FEMA Region VI signed the first Regional Response Plan in the nation on April 22, 1992.

As a vital part of the Federal Response Plan, regional plans coordinate the efforts of 28 federal agencies and the American Red Cross when addressing a catastrophic disaster. Under the plan, each federal regional office can immediately tap its own resources as needed, without waiting for special authorization or funding. A quicker response can save lives, mitigate damage, and conserve tax dollars.

Regional Contingency Plan

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) spells out the roles and responsibilities of various federal agencies to provide efficient, coordinated, and effective action to minimize damage from severe hazardous materials incidents. Incidents may include oil spills, toxic releases, and chemical plumes on a grand scale.

Although the NCP and the Federal Response Plan (FRP) can be activated concurrently, they serve different purposes. FEMA activates the FRP following a presidential declaration of a federal disaster, such as a major flood or a catastrophic earthquake. The NCP strictly applies to hazardous substances releases and oil discharges—regardless of FRP activation.

Partnership Workshops

In 1993, Region 6 recognized a need to develop stronger bonds with state emergency managers and floodplain coordination agencies. Region staff decided to stage a partnership workshop to foster open communication on issues of mutual interest and concern.

From 1994 to 1998, Region VI held five partnership workshops—in Austin, New Orleans, Hot Springs, Oklahoma City, and Santa Fe. Each lasted three days and offered both group meetings and breakout sessions.

Flood Forum

On May 24, 2000, FEMA Region VI helped plan and stage the first all-inclusive flood forum that addressed the latest flood insurance issues. Participants and attendees included lenders, realtors, appraisers, surveyors, engineers, insurance agents, community officials and certified floodplain managers (CFM). By bringing all parties together to share concerns, the organizers hoped to create unity, gain new perspectives, and initiate solutions.

The forum took place in Lawton, Okla., where residents received more than \$4 million in flood insurance claims during the 1998-1999 flood season.

The first part of the all-day event reviewed recent changes in public policy and the insurance industry that affect the availability and support offered by the National Flood Insurance Program (NFIP).

Afternoon breakout sessions followed lunch, allowing attendees to meet with flood insurance experts in their field to get answers to their specific questions. Planners organized the interactive sessions around targeted audiences:

Arkansas Out Front In Emergency Management

LITTLE ROCK, AR May 12, 1998—Arkansas was praised Monday for being one of the first states to take advantage of the Integrated Emergency Management Course (IEMC). Arkansas is only the sixth state to host local, state and federal representatives for this four-day program. Oklahoma City officials had completed a similar course just nine months before the bombing of the Murrah building. New Hanover County and Wilmington, NC officials participated just the year prior to being struck by Hurricanes Bertha and Fran. Jefferson County and Birmingham, AL officials completed their course in July, less than a year prior to the recent devastating tornado. The course, sponsored by the Arkansas Office of Emergency Services, is an exercise-based training presented by FEMA to help emergency management personnel respond to major disasters and to help prevent or reduce their impact.

More than 70 personnel statewide are participating in the course. Other participants include individuals from: the Governor's Office; the State Office of Emergency Services; the departments of Corrections, Education, Forestry, Health, Human Services, Highway and Transportation; Division of Pollution Control and Ecology; National Guard; Civil Air Patrol; State Police; U.S. Army Corps of Engineers; National Weather Service; American Red Cross; and Salvation Army.

Border Disaster Mitigation Project

Addressing hazards unique to the U.S.-Mexico border, in July 2000 FEMA Region VI and the Rio Grande Institute launched an initiative to help Texas communities become more disaster-resistant.

The initiative—called the Border Disaster Mitigation Project—extends along the Rio Grande from Del Rio to South Padre Island. Co-sponsors of the project include Webb County and the cities of Laredo and Brownsville.

Local officials first plan to seek public and private sector partners to help survey hazards, identify assets at risk, and highlight education and information management needs. Later phases will concentrate on reducing risk factors for damage from floods and manmade hazards.

CUSTOMER SERVICE

Overviews and Orientations

In 1998—under the direction of the public affairs officer of Region VI—a graphic designer in the Training, Exercise and Evaluation Branch developed a series of five PowerPoint presentations for use during employee orientation and training. The innovative series provides an overview on FEMA, the Mitigation Division, public assistance programs, human services programs, and administrative procedures in Operations Support. These standalone units have also been frequently used by other regions and at the Emergency Management Institute in Maryland.

Guide for Emergency Managers

FEMA often provides mobile telecommunications, operational support, life support, and power generation assets for the onsite management of federal disasters and all-hazards activities. Through its Mobile Operations Division (MOD), FEMA maintains mobile elements consisting of five Mobile Emergency Response Support (MERS) Detachments and a Mobile Air Transportable Telecommunications System (MATTS).

These mobile elements can provide quick help to support government emergency managers in their efforts to save lives, protect property, and coordinate disaster operations. But the emergency managers must know what help is available, along with an estimated delivery time.

Recognizing an urgent need, the MERS Detachment based at Region VI in Denton developed the first *Guide for Emergency Managers* in 1995. The booklet simply lists all mobile operations capabilities and catalogues all assets.

GTE Corporation Partnership

In mid-December 1992, after five months of helping out on Hurricane Andrew (DR-956), select Region VI personnel were called back home to respond to another federal disaster (DR-970), where a neighborhood in Southeast Houston had been destroyed by a tornado. As the holidays neared, stress levels rose—for both disaster workers and victims.

In partnership with telecommunications giant GTE, the Texas Division of Emergency Management and FEMA Region VI sent their entire staff from the disaster field office on a one-day blitz of the 10-block neighborhood.

Armed with wireless GTE phones and the toll-free teleregistration number, dozens of workers went door to door asking individuals whether they had registered for assistance. If not, staff helped victims make their phone calls on the spot. At the end of the day, nearly every victim had applied for aid. "Operation Call-In" proved a big success in both customer service and partnership.

Hazardous Materials Lending Library

The Hazardous Material Lending Library in Region VI, contains a wealth of information, including more than 500 videotapes on hazardous materials planning and response. The lending library serves as a no-cost training source for state and local agencies that may not be able to afford to stock an extensive video collection to meet their training needs. Later, Region VI started to share its comprehensive collection of information on hazardous materials via the Internet through its computerized bulletin board. The Hazardous Materials Information Exchange (HMIX), jointly managed and operated by FEMA and the Department of Transportation, answers questions about the transportation of hazardous materials and provides up-to-date information on federal HAZMAT training courses. Region VI loans about 30 videotapes a month to state, local, and private agencies. The tapes are shown at training meetings of 10 to 30 participants. As a result, through the lending library, Region VI expands its training coverage with a minimal expenditure of funds.

Teleregistration

To reduce paperwork and better serve victims of multiple disasters during 1989, Region VI set up a special customer help line, with all calls routed to a central phone bank. Disaster victims register for assistance by simply calling a toll-free number (*1-800-462-9029*)—a concept now known as teleregistration. Now one phone bank routinely takes calls from multiple disasters and regions. FEMA adopted this regional innovation for nationwide use in 1994. From July 1994 through July 30, 2000, the Texas phone bank registered more than 1.4 million individuals and families.

National Processing Service Center

In the summer of 1993, Region VI sent a team to Kansas City to assist Region VII in handling countless applications from the Great Midwest Floods. FEMA took the centralized processing concept nationwide in 1994.

The agency now operates three National Processing Service Centers (NPSCs), located in Maryland, Texas, and Virginia. These centers receive calls and process applications from disaster victims who need assistance. It is the job of NPSC employees to respond promptly, compassionately and carefully to the applicants' needs, so that their difficulties can be resolved as quickly as possible.

From July 1994 through July 30, 2000, NPSC registered more than 2.25 million individuals and families.

Oklahoma City Bombing Aftermath

Recovery from the 1995 Oklahoma City bombing required continuous improvisation to answer the needs of this unique situation. (*For a complete account, see the Special Section under Key Disasters.*) Significant milestones include:

The first use of a FEMA liaison to the Federal Bureau of Investigation (FBI). The U.S. Department of Justice (DOJ), as delegated to the FBI, immediately assumed the role of lead agency for crisis management following this heinous act of terrorism, while FEMA assumed the lead role in consequence management. A terrorism annex to the Federal Response Plan (FRP) later solidified those authorities.

The first use of a Multi-Agency Coordination Center (MACC), which operated on site.

The most extensive use of crisis counseling services, which FEMA funded from April 1995 to Feb. 1998, to help victims. (The DOJ continues to fund crisis counseling for victims involved with ongoing litigation).

The most extensive use of the FRP, which spelled out the responsibilities and lines of authority for 27 federal agencies and the American Red Cross, to coordinate federal resources.

An unprecedented move by the state to coordinate services from voluntary agencies to ensure timely assistance with minimal duplication of efforts.

The formation of a resource coordination committee to handle the outpouring of donations and contributions.

The most extensive use of FEMA's Urban Search & Rescue Task Forces, with 11 units on the scene working 12-hour shifts to find survivors.

Environmental Website

The environmental liaison officer (ELO) at FEMA Region VI pioneered the creation of a regional website devoted to environmental issues. The site covers such topics as environmental assessments, ELO duties, and an ELO disaster checklist.

RAPID RESPONSE

The key to effective emergency management is rapid, well-planned response. Personnel at Region VI routinely look for ways to cut response times and streamline operations. The following examples are among the region's many accomplishments.

New Mexico Hay Drop

Find a way to get the job done. Region VI answered local cries for help in the face of imminent disaster (DR-1202-NM). A serious New Mexico snowstorm stranded thousands of sheep and cattle in January 1998, leaving the herds unable to reach food. FEMA arranged for the National Guard to conduct its precision bombing exercises over the isolated areas—dropping one-ton bales of hay (donated by local ranchers) from planes 300 feet above, thus feeding the starving herds and flocks below. Using no hard cash, this creative intervention surely saved ranchers and the state from much greater economic loss.

Emergency Operations Vehicle

Region VI serves as the home base for the Emergency Operations Vehicle (EOV)—FEMA's largest mobile operations center. The EOV comes fully loaded with telephones, fax machines, computer workstations, satellite receivers and televisions, high-frequency and ultrahigh-frequency radios, and a 10-foot conference table. An exterior 40KW generator and its backup twin provide power for standalone operations.

The 82-foot 24-wheel rig sports expandable sides to easily accommodate a 20-person federal response team and get disaster recovery operations up and running quicker.

Operated by the FEMA Mobile Emergency Response Support (MERS) Detachment in Denton, Tx., the EOV in convoy with other MERS high-tech vehicles has supported numerous recovery operations, as well as special events. Disaster deployments include Hurricane Floyd, Hurricane Bertha and the South Texas Floods. Special EOV assignments include 1998 World Energy Conference in Houston and the 1999 NATO Summit in Washington, D.C.

The history of the EOV dates back to the early 1990s. After modifying a tractor confiscated from drug dealers, the U.S. Marshals Service ordered the custom-built trailer using seized drug

money. At the Marshals' request, FEMA repaired or replaced parts on the rig during its deployment in the aftermath of the Oklahoma City bombing in 1995. FEMA immediately saw its potential to assist other disaster recovery operations and proposed adding the rig to their fleet. Following its duty at the 1996 Olympic Games, FEMA Director James Lee Witt approved the inter-agency exchange of this valuable national asset.

MERS continues to retrofit the big rig to meet the needs of FEMA, largely using MERS in-house specialists. The remodeling includes more and better equipment, phone and data connections, and larger airbags over each axle for safety and stability.

The EOV easily proved its worth during the Grand Forks flood of 1997, when the devastated community came up short on meeting space and communications gear. For 30 days, the mayor and her staff used the EOV as office space. The EOV pulled similar duty at the Pine Ridge Reservation after a tornado hit that South Dakota community in 1999.

The EOV stands ready to answer a call to almost any disaster—MERS specialists take as few as two-and-a-half hours to pack up its gear and hit the road.

Phased Deployment and Predeployment

The region assigns people to set positions on its ROC and ERT-A Rosters, which also list each backup team member by position. Positions include state liaison, operations officer, human services officer, and mission assignments coordinator. Each unit trains regularly as a team. The region rotates all teams on a monthly basis, with updates posted all around the workplace and on the Intranet.

Upon deployment, each ERT-A member is assigned a cellular phone, a laptop computer, and a printer, plus any needed office supplies. Each go-kit comes packed in wheeled carryon luggage.

Regional Operations Center

In 1959, Senate Majority Leader Lyndon Baines Johnson came to Denton, Tx. to survey the site of the first underground Federal Regional Center (FRC)—built to shelter government leaders during a nuclear attack.

At the time, the Soviet Union stood as a sworn enemy out to conquer the United States. Under this viable threat, President Dwight D. Eisenhower ordered five subterraneous FRCs scattered across the country to ensure the continuity of the U.S. government.

The Denton FRC cost \$2.7 million and opened in 1964—16 months after the Cuban Missile Crisis and three months into LBJ's presidency following the assassination of President John F. Kennedy.

FRC designers created a frangible top floor to blow away upon impact. Shielded from a radiation blast, the two-story basement could house 450 people for at least 30 days. The plan called for essential personnel to work 12-hour shifts on rotation and to share kitchen and housekeeping chores.

Through the years, the FRC has served as an outpost for various civil defense agencies. When all civil defense duties rolled over to FEMA in 1979, Region VI assumed ownership of the 20-acre property and ran its daily operations from the FRC.

Quick Response System

The FEMA Mobile Emergency Response Support (MERS) Detachment based in Region VI created the quick response system (QRS), a preloaded deployment package that provides a base of operations for a small team of local, state, and federal responders.

The first deployment of the QRS came following Hurricane Marilyn in 1995. During its first week on the job, the QRS served as the sole communications system for the hurricane-damaged U.S. Virgin Islands. (Even FEMA Director Witt used the system to call President Clinton to brief him on damages and the recovery effort.)

The air-transportable base includes one truck and three all-wheel drive vehicles with standalone long-haul radios. The basic package also features:

High frequency and very high frequency voice and data equipment.

Real Estate Cooperation

After finding an adequate facility for a disaster field office (DFO), regional logistics teams must coordinate amongst state and federal agents, realtors, and building owners to sign a contract and open the DFO in a timely and efficient manner.

The 1998 Del Rio Floods (DR-1239) provided several unique challenges. The logistics team first rushed to locate the area's only vacant building of substantial size, an old warehouse. With help from the Mobile Emergency Response Support (MERS) Detachment based in Denton, the logistics team turned the warehouse into a highly functional DFO in just 48 hours. Marking a first for FEMA, the team set up a mobile air-conditioning system that pumped cool air through a maze of temporary ducts—an absolute must for South Texas in August.

Manufactured Housing Agreements

Region VI is the only region to establish manufactured housing agreements to be attached to state plans. These pre-disaster agreements stand ready to expedite recovery operations following a federal disaster, should mobile homes be needed to house disaster victims. The memorandums of understanding (MOUs) define roles, duties and expectations on state and federal sides.

All states in Region VI have signed these agreements, with the exception of the state of Texas (signature pending, as of June 2000).

Community Relations Agreements

Region VI is the only region to develop a community relations agreement to be attached to state plans. These pre-disaster agreements stand ready to expedite recovery operations during a federal disaster. They cover state and federal outreach programs that alert victims of disaster assistance that might be available to them. The Memorandums of Understanding (MOUs) define roles, duties, and expectations on state and federal sides.

As of June 2000, one state in Region VI signed this agreement, with four signatures pending.

RISK REDUCTION

Many factors, taken alone or working in tandem, place Region VI at high risk for manmade disasters.

In 1997, Texas led the nation in toxic chemical releases.

The greatest cluster of oil and gas plants in the Western Hemisphere runs between Baton Rouge and New Orleans—commonly called 'toxic alley.' The third greatest cluster flanks the Houston Ship Channel—once known as the nation's most polluted waterway.

Based on history, Texas ranks third on the list of states at highest risk for all disasters. Arkansas, Louisiana and Oklahoma face a medium risk. In Region VI, only New Mexico carries a low risk.

Potential manmade threats include radiation leaks, chemical plumes, nuclear meltdowns, hazardous materials spills, and oil refinery explosions on a grand scale. Preparation holds the key to risk reduction and aversion.

Toward that end, federal law and agency direction put FEMA at the forefront of contingency planning and consequence management. Regional innovations further heighten awareness and lower risk.

Joint Contingency Plan

The U.S. Environmental Protection Agency (EPA) serves as the lead agency in developing and implementing contingency plans to protect the nation's air, land and water from the harmful effects of natural and manmade disasters. The EPA works in close partnership with FEMA.

Region VI made history in 1998, as the only region to sign a Memorandum of Understanding (MOU) with the EPA for regionwide and binational preparedness activities.

In May 1999, when environmental officials from the United States and Mexico met during Border Frontera XXI, they announced several other environmental milestones along their 2,000-mile border.

Region VI made history again in signing the first Sister City Joint Contingency Plans to establish cooperative mechanisms for responding to chemical emergencies in the border communities of Laredo/Nuevo Laredo, Brownsville/Matamoros, and Eagle Pass/Piedras Negras. The border cities of El Paso, Texas and Juarez, Mexico signed the fourth sister city pact in June 1999.

Chemical Stockpile Emergency Preparedness Program

In 1985, the U.S. Congress directed the Department of Defense to destroy its entire stockpile of chemical weapons. The UN-sponsored Chemical Weapons Convention, ratified by the U.S. Senate in 1997, stepped up the pace of disposal, setting a deadline of April 2007.

The Army stores the stockpile at eight sites across the country: Anniston, Ala.; Pine Bluff, Ark.; Pueblo, Colo.; Newport, Ind.; Bluegrass, Ky.; Edgewood, Md.; Umatilla, Ore.; and Deseret, Utah.

The Pine Bluff Arsenal stores the second largest stockpile, 12 percent of the nation's chemical munitions, including nerve agents and mustard gas sealed in landmines and rocket warheads. Further mandated by Congress to protect the public from the consequences of any off-post release of chemicals during storage or destruction, the Army established a Memorandum of Understanding (MOU) with FEMA to oversee the Chemical Stockpile Emergency Preparedness Program (CSEPP).

In 1996, the Arkansas Department of Emergency Management (ADEM) obtained the first mobile decontamination unit in Arkansas.

Besides chemical incidents, state and local emergency authorities are better prepared to deal with natural disasters, hazardous materials spills, and acts of terrorism as a result of CSEPP.

Pantex Plant

Pantex—America's only nuclear weapons assembly and disassembly plant—has been in operation for 40 years in Amarillo, Tx. Workers at the U.S. Department of Defense (DOE) facility have dismantled more than 40,000 nuclear weapons with no significant offsite impact. Acted as observers for preparedness training exercises held in 1999 and 2000 and attended participated in emergency management planning meetings in 1999 and 2000.

Radiological Emergency Preparedness Program

Following the 1979 accident at Three Mile Island, President Jimmy Carter assigned FEMA the lead role in developing adequate emergency preparedness plans at the nation's nuclear power plants.

As a result, FEMA created the Radiological Emergency Preparedness (REP) Program to help state and local agencies better respond to threats of accidents or sabotage. Subsequent federal laws mandated a strict training schedule, precise review procedures, and regularly planned exercises.

REP training exercises include full-scale emergency response by state and local partners, plus numerous out-of-sequence drills.

Many teams continue to work on more revisions, to be submitted for online review and comment prior to adoption. In fall 2000, four regions will conduct pilot tests of the new REP initiatives. Through the strategic review process, Region VI REP activity has dramatically expanded.

Of the nation's 68 commercial nuclear reactors currently licensed by the Nuclear Regulatory Commission (NRC) to generate electrical power, Region VI oversees contingency planning and training curriculums at six nuclear power plants: Arkansas, Grand Gulf Nuclear Station (shares with Region V), River Bend Station, South Texas Project; and Comanche Peak.

All of the funding for REP now comes from the private utility companies that own the nuclear power plants. After review, FEMA reports its findings to the NRC for consideration in power plant licensing decisions.

REP Workshop

In 1989, to provide unity and keep all parties well informed, FEMA Region VI created the annual REP workshop for radiological emergency workers.

In February 2000, Region VI hosted its annual workshop in Galveston. Topics included improved ingestion pathway clearance exercises, successful plume-in-a-box techniques, and meeting the challenges now facing emergency preparedness.

Federal participants and sponsors include the NRC, the Bureau of Radiation Control (BRC), U.S. Food and Drug Administration (FDA), the U.S. Department of Agriculture (USDA), the Federal Aviation Administration (FAA), the U.S. Environmental Protection Agency (EPA), and the U.S. Department of Energy (DOE). State hosts included the Texas Division of Emergency Management and the Texas Department of Health.

In 1999, the FEMA Preparedness Directorate combined the HAZMAT, CSEPP, and REP programs into the Chemical and Radiological Preparedness Division to provide synergy and create a more integrated HAZMAT structure.

Waste Isolation Pilot Program

The Waste Isolation Pilot Program, or WIPP, serves as the world's first underground repository licensed to safely and permanently dispose of transuranic radioactive waste left from the research and production of nuclear weapons. After more than 20 years of scientific study, public input, and regulatory struggles, the WIPP plant began operations on March 26, 1999.

Located in the remote Chihuahuan Desert of Southeastern New Mexico, project facilities include disposal rooms mined 2,150 feet underground in a 2,000-foot thick salt formation that has been stable for more than 200 million years. WIPP's transuranic waste transportation system sets the standard for safety. WIPP trucks, operated by highly trained drivers, only carry the waste in

containers certified by the Nuclear Regulatory Commission (NRC). The trucks meet the highest federal transportation standards and follow set procedures for inclement weather, safe parking, and notification to the states. Still, WIPP plans to monitor each shipment by a satellite tracking system. The U.S. Environmental Protection Agency (EPA) certifies whether WIPP meets all radioactive and hazardous material requirements, while FEMA helps coordinate preparedness training and disaster response activities. Federal authorities further made WIPP-specific training of state, tribal, and local emergency response personnel a key element of this safe transportation system.

Because a major transportation route to the WIPP plant in New Mexico runs through the breadth of Texas on Interstate Highway 20, WIPP held its first preparedness training exercise in Midland in 1999.

CHER-CAP

In 2000, the Preparedness (PT) Directorate launched a national campaign as part of the enhancement of the Hazardous Materials Program, which plans to expand and pilot test the Comprehensive HAZMAT Emergency Response Capability Assessment Program (CHER-CAP) in communities in each of the ten FEMA regions.

CHER-CAP helps local communities improve their ability to plan for and respond to mass casualty incidents involving hazardous materials. CHER-CAP takes participants through the entire process of planning, training, and exercises. It firmly supports *Project Impact* by helping the communities become more disaster resistant to technological hazards.

With Director Witt's approval of CHER-CAP as the Agency's premier hazardous materials program, Region VI created a video explaining the purpose and successes of CHER-CAP. The video debuted at the mid-year meeting of the National Emergency Managers Association (NEMA) in 2000 and will be used by headquarters and the regional offices as CHER-CAP programs roll out across the country.

Project Impact

Launched by Director Witt in October 1997, *Project Impact* focuses on creating disaster-resistant communities through education, mitigation, and public and private partnerships. By taking action before disaster strikes, FEMA hopes to reduce the amount of federal money spent on picking up the pieces after a disaster—and hopes to reduce the risks for property loss and loss of life that every state faces. As of May 2000, more than 120 communities and 1,000 business partners across the country are participating in *Project Impact*.

During its first annual awards banquet in 1998, *Project Impact* named the City of Tulsa, Oklahoma the "Most Outstanding Model Community." The nationwide award recognized Tulsa for its efforts in mitigating damage from floods and tornadoes. The city has invested approximately \$300 million to complete stormwater capital improvements; develop a comprehensive watershed management program that includes acquisition and removal of homes from the floodplains; and install a prototype alert system. Tulsa used several creative ways to pay for these loss prevention projects, including a sales tax that provides mitigation funds on an annual basis.

In October 2000, Tulsa—once known as the flood capital of the nation—became the first to reach a class three community service rating, meaning residents will pay 35 percent less for flood insurance as a result of enacting and enforcing tough land use and building permit requirements.

The Safe Room Initiative

One of the worst natural disasters in recent U.S. history occurred May 3, 1999, when an outbreak of some 70 tornadoes ripped through the nation's heartland—killing 44 people and injuring 795 in the state of Oklahoma alone.

After touring the disaster areas with Director Witt, President Clinton brought national attention to the need for in-house shelters, or safe rooms that would withstand high winds and flying debris.

Del City, Oklahoma

May 8, 1999

A taskforce of state and federal officials immediately developed a multifaceted program—timed in conjunction with the recovery phase of the disaster in Oklahoma—calling for swift action and quick results. Director Witt approved the proposed program, which included a publicity campaign and a state-sponsored rebate program, and Oklahoma became the pilot site of the Safe Room Initiative. The task force succeeded by working together to establish clear-cut goals and produce informative products:

FEMA Region VI prepared a report that chronicled the Safe Room Initiative of Oklahoma—from the initial planning phases through completion. The report provides a thorough record of activities, accomplishments, and available resources, allowing easy replication by future safe room teams.

SPECIAL EVENTS

A joint state and federal news conference generated much media and public interest in the Safe Room Rebate Program—a \$2,000 rebate funded by the FEMA Hazard Mitigation Grant Program and the State of Oklahoma, for use by disaster victims when rebuilding their homes.

Other events included a Safe Room Traveling Road Show, a news conference kicking off the road show, and a two-week promotional campaign that included personal visits to local media in conjunction with the road show.

While President Clinton urged tornado victims to use a portion of government aid available to build a Safe Room in 1999, Director Witt and FEMA had championed safe rooms since 1997, in the aftermath of the devastating tornadoes that blew through Arkadelphia, Arkansas (DR-1166). Region VI also launched an effective public education campaign on safe rooms following the Arkansas tornadoes in early 1999 (DR-1266), built around the booklet *Taking Shelter From the Storm*, which Region VI developed. Arkansas later rolled out its own rebate program, offering the first 1,000 homeowners reimbursements of \$1,000 each toward the cost of building a safe room. FEMA continues to encourage everyone in high-risk areas to build a safe room.

Repetitive Loss Strategy

After seeing the devastation wrought by the 1993 Great Midwest Floods, FEMA Director Witt vowed to end the cycle of flooding and rebuilding in flood-prone areas. Congress obligingly increased funding for voluntary buyouts of properties in floodplains. During Witt's tenure, FEMA has helped fund the purchase of more than 20,000 flood-prone properties. The agency distributes the funds through a variety of programs—including *Project Impact*, the Hazard

Mitigation Grant Program (HMGP), and the National Flood Insurance Program (NFIP), which is administered by FEMA.

FEMA's repetitive loss strategy consists of four major components: List, Plan, Mitigation, and Insurance.

To stop harmful floods and drop those shameful rankings, more than 2,000 communities in Region VI signed up for the National Flood Insurance Program (NFIP) by spring 2000, with nearly 1,000 in Texas alone.

FEMA continues to encourage people to accept the responsibility and consequences of their choices, rather than rely on others to subsidize their poor decisions, so the agency may raise NFIP premiums to more fully reflect the risk, thereby reducing or eliminating the insurance subsidy.

As part of its reinvention goals, FEMA plans to increase the number of flood insurance policies by working closely with local governments, insurance companies and financial institutions.

FEMA continues to seek funding to address the repetitive loss problem. For instance, the Emergency Supplemental Appropriations Act for Fiscal Year 1999 gave FEMA \$230 million for unmet disaster needs in 21 states—specifically earmarked for mitigation, disaster relief, and buyout assistance.

Comprehensive HAZMAT Emergency Response-Capability Assessment Program (CHER-CAP)

FEMA offers the Comprehensive HAZMAT Emergency Response-Capability Assessment Program (CHER-CAP) to assist local communities and Tribal governments in obtaining a greater understanding of HAZMAT risks, identifying planning deficiencies, updating plans, training first responders, and stimulating and testing the system for strengths and needed improvements. CHER-CAP also enhances the work FEMA has begun in *Project Impact* by providing a technological hazards component toward building disaster resistant communities throughout our Nation.

As a voluntary program, CHER-CAP uses the skills and resources of Federal, State, Tribal, and local governments, and industry partners, to identify and address local jurisdictions' HAZMAT preparedness needs. It also enhances the community's ability to operate within the National Response System, as described in the National Contingency Plan. The Environmental Protection Agency and the Department of Transportation are key Federal partners in CHER-CAP.

FEMA's experience shows that jurisdictions significantly improve their HAZMAT and all-hazards preparedness as a result of CHER-CAP.

CHER-CAP also assists jurisdictions in identifying ways HAZMAT prevention and mitigation measures can be implemented to reduce HAZMAT emergencies and protect the public.

Counterterrorism

The fall of the Berlin Wall in November 1989 signaled the end of the Cold War, yet the threat of attack by a domestic or foreign enemy still grows. As part of FEMA's commitment to all-hazards planning, they joined with five other federal agencies to form the National Domestic Preparedness Office to assist state and local emergency responders with planning, training, equipment, and exercise needs necessary to respond to a weapon of mass destruction incident.

FEMA alone earmarked \$34.5 million in its fiscal year 2001 budget for counterterrorism.

The impetus for this initiative came in 1995 in the wake of the Oklahoma City bombing—which stands as the 'deadliest act of domestic terrorism in U.S. history.

Unlike the natural and technological disasters that the United States and other countries prepare for and respond to on a regular basis, terrorism is difficult to predict and even more difficult to prepare for.

Terrorists today have access to sophisticated communications systems and a wide range of weapons, including those capable of causing mass destruction.

Terrorists also have something else to hide behind. Complacency. The United States learned that lesson through the tragic bombing in Oklahoma City. Oklahoma City is a wonderful community, but would have been ranked low on a scale of potential targets of terrorists. Yet today it stands as the tragic example of the single worst terrorist event in United States—and, even worse, an event that was caused by an American.

Oklahoma City galvanized the United States into action and President Clinton was in the forefront of taking executive action and proposing legislation to Congress to provide a system for building preparedness and response capability in this country to respond to the consequences of terrorism.

In addition to the legislation that he proposed, President Clinton also signed a Presidential directive that clearly stated the U.S. policy on counter-terrorism. It has formed the basis for the Federal Government's preparedness for and response to terrorism.

Among the many issues it addressed, it tasked the Federal Emergency Management Agency with the responsibility for coordinating consequence management of the Federal Government for terrorist incidents, as well as other important coordinating functions in support of Federal preparedness for and response to terrorist incidents.

REGION VII

Introduction

The Federal Emergency Management Agency's (FEMA) Region VII encompasses four states: Iowa, Kansas, Missouri, and Nebraska. The economies of all four states are based primarily on agriculture or agriculturally related industries.

Based on demographic statistics available in 2000, Iowa has a population of 2,869,413. Des Moines is the capital city and the major urban area of the state. Other Iowa population centers include Cedar Rapids, Davenport, Dubuque, Iowa City, Sioux City, and Waterloo.

Kansas has a population of 2,654,052. Topeka is the capital city. Wichita is the largest urban area in the state beyond the Kansas City metropolitan area, which includes Overland Park, Olathe and Lawrence.

Missouri has a population of 5,468,338. The state capital is Jefferson City, in central Missouri on the Missouri River. Major population centers are St. Louis, Kansas City, Springfield, Independence, and Columbia.

Nebraska has a population of 1,666,028. Lincoln is the capital. Major metropolitan centers are Omaha, Lincoln, Grand Island, Bellevue, and Kearney.

Headquarters for Region VII are located in Kansas City, Mo., at the geographic center of the four-state region. Approximately 90 percent of the more than 12 million residents living in Region VII are within approximately four hours' driving time. The location of the regional office puts regional staff near the probable disaster sites, which facilitates quick response.

Region VII Risks

The risks faced by this central United States region include flooding, tornadoes, earthquakes, as well as the threat of hazardous materials.

The Mississippi River runs the length of the eastern border of the region, along Iowa and Missouri. The Missouri River is the boundary between Nebraska and Iowa. It serves as the state line in northeastern Kansas and then flows across the state of Missouri before emptying into the Mississippi at St. Louis. These large waterways and their numerous significant tributaries and associated drainage basins mean that riverine flooding is the major emergency threat in Region VII. In addition, severe thunderstorms can cause frequent flash flooding throughout the Midwest.

The four-state region is also situated in the heart of what is called "tornado alley." Severe spring and summer storms frequently spawn killer twisters. The most recent example of the devastation caused by tornadoes occurred in Oklahoma and Kansas in May of 1999.

The New Madrid Fault roughly parallels the Mississippi River and passes through the southeastern corner of Missouri. While the fault remained quiet throughout the 20th century, its last major earthquake remains one of the most violent natural events recorded in North America. The great New Madrid earthquake of 1811-1812 was a series of quakes occurring over a three-month period. The main shocks were estimated to be greater than magnitude 8.0. This was the largest release of seismic energy in the United States. Earthquakes

Major transportation corridors represented by the large waterways and interstate highway system make the region susceptible to hazardous materials accidents. The region has five nuclear power stations and is responsible for off-site planning and evaluation for the Quad Cities Nuclear Power Station in Cordova, IL. The 10-mile emergency-planning zone encompasses counties in Iowa.

Radiological Emergency Preparedness

A Brief History

From 1993 to 2000, Region VII responded to more than 33 federal disasters and emergency declarations in the four-state region (Iowa, Kansas, Missouri and Nebraska) and in other states recovering from disasters.

The pivotal event that shaped the way Region VII faces emergencies was the Midwest floods of 1993. The historic flood was, in fact, not one flood, but a series of floods that necessitated federal disaster declarations in nine states. Record flooding occurred and re-occurred over a three-month period, complicating flood fighting efforts and compounding the challenges inherent in disaster response and recovery. The almost continuous high-water levels and saturated soil conditions weakened protective levees and dikes throughout the region, creating unprecedented challenges for emergency management offices at every level.

But if the Midwest floods brought untold misery to thousands of residents in the affected region, the floodwaters also taught hard lessons about the importance of taking steps today to prevent the disasters of tomorrow. In the aftermath of the historic 1993 floods, Region VII began a major effort to remove people from harm's way by helping communities "buy out" at-risk homes in the floodplain.

By removing people and homes from the dangerous floodplain, untold human and financial costs were saved two years later in 1995, when the floodwaters returned. By contrast to 1993, the 1995 flood event was a tame event, thanks in large measure to the lessons learned in 1993 and the commitment made to investing in prevention.

Learning the lessons of past disasters to minimize or prevent the devastating effects of future disasters remains a top priority for Region VII and all of FEMA.

In the years since the reorganization of FEMA under Director James Lee Witt's direction, Region VII staff members played key roles in re-shaping programs and procedures to streamline the agency's response to disasters and to improve fiscal accountability, customer service and the partnerships between federal, state and local emergency managers. In particular, Region VII staff members played major roles in the development of the new Public Assistance Program (PA Process), the reshaping of grants management to expedite the disaster closeout process (Grants Management), and the Customer Service Initiative.

Timeline

1993

Regional Federal Response Plan approved

Regional, federal and state partners provided orientation

Developed over 14 "Training Modules and Operating Guidance" with position descriptions for individual rostered positions

Regional training and exercises completed

Regional Interagency Steering Committee (RISC) formed and meetings held

The Great Midwest Floods

First activation of the Regional Operations Center (ROC)

Federal Response Plan activated to respond to each state in region

Federal disasters declared in all four states in Region VII (Iowa, Kansas, Missouri, Nebraska)

Central Processing Office (CPO) established to service all states in Region VII

Region initiates largest buyout of flood-damaged properties in nation Buyout Program
Special Disaster Assistance Temporary Employee (SDATE) Program implemented
Budget Tracking System developed and implemented
Eight disasters declared in the region

DR-1006-Missouri (tornadoes/flooding)

DR-1000-Kansas (storms/floods)

DR-998-Nebraska (storms/floods)

DR-996-Iowa (storms/floods)

DR-995-Missouri (storms/floods)

DR-989-Missouri (flooding)

DR-986-Iowa (flooding)

DR-983-Nebraska (ice jams/flooding)

1994

FEMA publishes first Strategic Plan; Region VII develops Action Plan
Region VII Streamlining Action Plan (March 4)

Reduced regional internal regulations by 90 percent

Regional Customer Service Initiative begins

Region VII Customer Service Action Plan completed

Program initiated at the region's Central Processing Office (May 18)

Re-invigorated regional support of fire training/prevention programs

Regional office reorganized by function to align with FEMA Headquarters

Initiated non-monetary regional awards program

Union agreement with AFGE Local 4059 implemented (August 16)

Region joins with states to implement a streamlined, functional approach to the cooperative agreements

Region VII proposed as "Benefits Clearinghouse" Center of Excellence, to assist in buyouts across the nation

National Mitigation Forum held in Kansas City)

State/Federal Disaster Response and Recovery Partnership Workshop

Region assists in Senate-mandated study of "FEMA Regional Structure"

Two disasters declared in the region

1995

Region VII hosted a joint FEMA/State/Utility SERF Workshop in Kansas City (February 1-3)

Oklahoma City bombing in April; Region VII deployed leader of Emergency Support Function

#9 with the Multi-Agency Coordination Center

Region VII prepared "Mitigation Division Strategic Staffing Plan for Regional Offices"

Customer Service Initiative continued

Employee surveys conducted by FEMA Headquarters

Region sponsored a major exercise called "Operation Thunderbolt-95" (Kansas, September)

Vice President's "Hammer Award" presented to Region VII Hazard Mitigation/Duplication of Benefits Team

One disaster declared in the region

DR-1054-Missouri (Flooding)

1996

Briefing for Government of Panama

Region VII piloted the Automated Deployment Database (ADD) system (June)

Two disasters declared in the region

Region VII supported disasters declared in other regions

DR-1096-West Virginia (flooding) "Turnkey" Operation (DR-1096-WVA)

1997

Region VII joins with Regions V and VI to form Central Territory in effort to improve service

Region VII/States hold Strategic Planning Workshop

Customer Service Initiative – Improving Regional Internal Relations

Region participates in CAT-97, a multi-regional earthquake preparedness exercise with CUSEC (Earthquakes)

OS Conference at EMI. Region VII specialist gave Powerpoint presentation on Grants Management

Region participates in TEREK 97 anti-terrorism exercise in Lincoln, NE (TEREK 97)

Supported NEMIS development at headquarters with seven staff persons

Two disasters declared in the region

Supported disasters declared in other regions

DR-1153-Nevada (severe storms and flooding) "Turnkey" Operation 1998

First Project Impact community designated: Dennison, Ia.

"Partnership 2000 Summit" with Region VII states

Region supports Public/Private Partnerships with conferences in every state

Streamlined Media Analysis Procedures developed by Region VII

Region joins in "Hassle-Free Zone" Initiative in Kansas City Metropolitan Area, one of three cities chosen by the National Performance Review

1st Annual Regional Grants Management Workshop held at regional office

Five disasters and one emergency declared in the region

DR-1258-Kansas (flooding)

DR-1256-Missouri (flooding)

DR-1254-Kansas (flooding)

DR-1253-Missouri (flooding)

DR-1230-Iowa (severe storms/flooding) (DR-1230-IA)

EM-3126-Kansas (DeBruce grain elevator explosion) (EM-3126)

Supported disasters declared in other regions

DR-1209-Georgia (flooding) "Turnkey" Operation

1999

Region supported Papal Visit to St. Louis

Conducted Y2K National Workshop

Piloted two Y2K courses for local emergency managers, federal and state agencies

Safe Rooms initiative

Region participated in Hassle-Free Initiative's "After School Fair" (October 21)

Y2K initiative coordinating planning for rollover with federal and state partners

Preparedness grants provided to states

Activation of Regional Operations Center for conversion period

Director's Award earned by seven regional employees for work on NEMIS

Region briefs Chinese Delegation

Five disasters declared in the region

DR-1286-Nebraska (flooding)

DR-1282-Iowa (flooding)

DR-1277-Iowa (flooding)

DR-1273-Kansas (tornadoes) (DR-1273)

DR-1270-Missouri (flooding)

Supported disasters declared in other regions

DR-1303-Maryland (Hurricane Floyd) "Turnkey" Operation

2000

Region initiated new Emergency Management Performance Grants (EMPG)

"Evaluating Refuge Areas in Kansas Schools" Workshop, Wichita, Ks.

"Heartland Safe Schools Conference" in partnership with the U.S. Department of Education, Kansas City

Regional Director John Miller retired

Region hosted a National Infrastructure Conference

Region awards Cedar Rapids an Emergency Management Preparedness Assistance grant for "Safe Schools Demonstration Project"

Region joins Regions VIII and X in "Building Disaster Resistant Safe Schools Initiative" as part of a special Project Impact grant

Region funded and participated "Solving the Tornado Puzzle for Schools" workshop, Topeka, Ks. Safe Rooms

First fire suppression grant, Camden County, Mo.

Two disasters declared in the Region

DR-1328-Missouri (flooding)

DR-1327-Kansas (tornadoes)

Key Disasters, Emergency Activities and Year 2000

DR-986-IA, DR-989-MO, DR-995-MO
DR-996-IA, DR-998-NE, DR-1000-KS

The Mississippi River runs the length of the eastern border of Region VII, along Iowa and Missouri. The Missouri River is the boundary between Nebraska and Iowa. It serves as the state line in northeastern Kansas and then flows across the state of Missouri, between Kansas City and St. Louis, before emptying into the Mississippi at St. Louis. In the spring of 1993, these two great rivers and their many tributaries created a disaster emergency that made headlines and history.

Setting The Stage

The Mississippi River Basin is the area lying above the confluence of the Ohio and Mississippi Rivers. Its principal tributary is the Missouri River, which drains 529,300 square miles above its mouth at St. Louis including 9,700 square miles in Canada. It is in this basin that the deluge of rain and consequent record flooding occurred during the spring, summer and fall of 1993. The first nine months of 1993 were the wettest in 121 years with 44.5 inches of rain falling in the region. (The previous record was 44.2 inches in 1881.)

The 12-month period from September 1992 through August 1993 was the wettest 12-month period on record, with 54 inches of rain falling and an unusual persistence in the rainfall pattern. Soil moisture was the highest while evaporation rates were the lowest. The meteorological phenomenon called El Nino, which drastically changed normal continental weather patterns, is thought to be the principal natural contributor to the Midwest floods of 1993.

The 1993 Midwest floods broke records both in terms of river levels and duration. Called a 500-year flood, the surging Mississippi River affected the nine upper Midwest states for more than six months. Before it was over, the historic flooding prompted disaster declarations in 532 counties. More than 55,000 homes were flooded. Even more tragically, 50 lives were lost.

The Events

On April 26, 1993, a major disaster declaration (DR-986-IA) was signed for four Iowa counties due to severe storms and flooding in and near Cedar Rapids. By the end of the month, a total of 16 counties in Iowa had been included in the disaster declaration.

On May 11, severe storms and flooding near the confluence of the Mississippi, Illinois, and Missouri Rivers necessitated a presidential disaster declaration (DR-989-MO) for Individual Assistance only for St. Charles and Lincoln counties in Missouri. The incident period began with the arrival of the first crest on April 15. Five more Missouri counties (Jefferson, Marion, Pike, St. Genevieve, and St. Louis) were added to the declaration. The Mississippi River remained above flood stage for weeks and the incident period was not closed until May 29. A disaster field office was opened in Earth City, Mo. Unfortunately, these two spring floods were just a preview of what was to follow. As it would soon become clear, the early floods were the first wave of a slow moving, rolling disaster that would continue for months.

Waves of torrential rainstorms through the Midwest continued to cause localized flooding and flash flooding. On June 25, approximately 800 families in St. Charles County, Mo. were urged to evacuate their homes. On June 26, the Mississippi River reached flood stage at St. Louis. The river would stay above flood stage constantly for more than three months.

During much of the summer of 1993, a persistent atmospheric pattern of excessive rainfall occurred across much of the upper Mississippi River Basin. The major river flooding resulted primarily from numerous series of heavy rainfall events from June through late July. During the June-August period, more than 24 inches of rain fell on central and northeastern Kansas, northern and central Missouri, most of Iowa, southern Minnesota, and southeastern Nebraska. As much as 38.4 inches of rain fell in east central Iowa.

Following a short, dry period, a prolonged siege of heavy precipitation occurred between June 30 and July 11. This intense rainfall period led to record flooding on portions of the lower Missouri River and combined with the crest already rolling down the Mississippi to establish record river stages from the Quad Cities area to Thebes, IL.

On July 9, at the request of Missouri Gov. Mel Carnahan, President Clinton declared 18 counties in Missouri federal disaster areas (DR-995-MO). During the next three months, the number of Missouri counties included in the Presidential disaster declaration grew to 100. Ultimately, 112 of Missouri's 114 counties were included in the disaster designation. On July 9, President Clinton also declared 11 counties in Iowa federal disaster (DR-996-IA) area. That same day, extreme amounts of rainfall in Iowa produced record flooding on the Raccoon and Des Moines Rivers. Just as the crests from these two rivers reached Des Moines, several more inches of rain fell, rapidly boosting the river levels and flooding the city's water treatment plant.

On July 13, the first disaster assistance centers opened in Iowa and Missouri. Before the summer was finished, all of Iowa's 99 counties were included in this disaster declaration.

The Midwest flooding was a disaster that demanded and received prompt and serious attention. President Clinton visited Iowa on July 4 to promise disaster relief. American Red Cross President Elizabeth Dole visited St. Charles County, Mo. on July 7 to survey how the Red Cross was carrying out its mission. Vice President Gore visited Grafton and Lemay, Mo. on July 12. The President paid a return visit to Iowa on July 14 and again on July 17 with the Vice President and a number of Cabinet members for a news conference in Arnold, Mo. The President designated Secretary of Agriculture Mike Espy as his Cabinet level coordinator of disaster relief and recovery activities for the Midwest floods. Secretary Espy made several trips to Missouri to review the status of recovery operations.

Meanwhile, heavy rains in central and northeast Kansas, central and southeast Nebraska, and central and northwest Missouri caused low-level flooding and flash flooding throughout the Kansas and lower Missouri River systems.

On July 7, Nebraska Gov. E. Benjamin Nelson announced that the state was capable of responding to the flooding without federal assistance. Subsequent violent storms and continued flooding changed his mind, however, and on July 14 Governor Nelson requested a presidential disaster declaration for Nebraska. The declaration was signed on July 19 (DR-998-NE).

By the end of June, most flood-control reservoirs in the upper Mississippi River Basin and on the upper Missouri River were at or near capacity and soils were saturated. By mid-July, Milford and Tuttle Creek reservoirs in central Kansas were at full flood control pool. Due to continued heavy rainfall, the discharge rate had to be increased to prevent overtopping the gates. The increased volume in the Kansas River began to influence Missouri River levels downstream in a few days.

On July 22, President Clinton signed a major disaster declaration (DR-1000-KS) for severe storms and flooding in five eastern Kansas counties. The initial incident period was set at June 28 to August 26. It was reopened September 29 before finally closing on October 5.

While many people count these six declarations to be the "Great Floods of '93," the Interagency Hazard Mitigation Team Report includes the December 1 major disaster declaration (DR-1006-MO) for flooding in southeastern Missouri counties as well. Twenty-four counties were declared for Individual Assistance; 10 of them had not been included in the summer's previous declarations. Fourteen counties were declared for Public Assistance. The report notes that most floodwaters from the summer had receded, but that "the issues and recommendations outlined in their report were still timely and applicable to DR-1006-MO."

Issues Particular to Midwest Floods of 1993

Between April and the end of July 1993, Region VII had six federal disaster areas involving both Individual Assistance and Public Assistance. Two of the six flood disasters were declared in both Missouri and Iowa. Kansas and Nebraska each had one. With four simultaneously active disaster field offices in the four-state region, the demands placed on Region VII personnel by the 1993 Midwest floods were particularly acute. All programs and functions were challenged in this multi-state disaster, which was dubbed "the flood of the century."

Human Services

In 1993, FEMA still asked disaster victims to visit Disaster Application Centers (DACs) to apply for disaster assistance. During the Midwest floods, a Missouri toll-free disaster information hotline was set up to provide flood victims with general information and to answer questions about disaster assistance. Still, the application process was not designed to serve the needs of the thousands of people affected by this overwhelming event. A new approach was needed. Kansas City."

Public Assistance

The 1993 floods caused major damages to roads, bridges and other public facilities in the nine affected states. These damages ranged from blown culverts and washouts on rural roads and city streets to the destruction of bridges and portions of interstate highways.

Indirect losses included increased transportation costs when detours required by floodwaters added as many as 100 miles to normal trips. The economic impact was particularly severe on communities that relied on bridges for commerce and jobs. Keokuk, Ia., for example, was cut off from market areas in Illinois and Missouri for several weeks when the approaches to bridges over the Mississippi and Des Moines Rivers were inundated. Jefferson City, the Missouri state capital, was cut off from the northern half of the state when the northern approaches to the Highway 54 and 63 bridge across the Missouri River were flooded in July of 1993. As part of their recovery program, many Missourians separated from their jobs by floodwaters filed claims for Disaster Unemployment Assistance.

The floods also caused extensive damages to water and wastewater treatment plants. The Environmental Protection Agency (EPA) identified 200 municipal water systems impacted by the flood. One of the worst victims was the Des Moines Water Works, which was out of operation for 12 days due to the floodwaters. In addition to physical damages amounting to \$12 million, significant impacts were felt in the service area. Businesses and government offices were forced to close because of lack of fire protection. Bottled water and portable toilets had to be provided for residents.

The Federal Aviation Administration (FAA) identified 33 airports with varying degrees of damage in the flood-affected states. Most of the flooded airports were in Missouri (16) and Iowa

(12). On July 30, when the Monarch-Chesterfield Levee was breached over a 1,200-foot section (photo right), the Spirit of St. Louis Airport, sustained \$1.7 million in damages. Other major airports that were flooded included those at Creve Coeur and Jefferson City and the Kansas City Downtown Airport.

Most of the main stem rivers were closed to barge traffic from July 11 until August 15, and severe limitations on barge traffic continued through September, October and November.

In response to the floods of 1993, the Public Assistance Program adjusted its funding formula for four of the six flood disasters in Region VII (DR-995-MO, DR-996-IA, Dr-998-NE, DR-1000-KS). For those disasters, the traditional cost-share formula for Public Assistance (75 percent federal-25 percent state) became 90 percent federal funding and 10 percent state funding.

Historic and Cultural Impacts

The flood took its toll on historic and cultural resources as well. Historic homes in Ste. Genevieve and a church in Portage des Sioux were damaged. The Sac and Fox Indian tribes in Mesquakie, Ia. lost 10 homes and the ceremonial area of their grounds. The Kickapoo Tribe in Kansas suffered damages to their crops, bridges, roads, and water system.

The Missouri River tried to cut a new channel through the cemetery of Hardin, Mo., exhuming caskets and disinterring over 500 bodies in the process. A mission assignment was authorized to assist state and local officials locate and retrieve the human remains washed out by the flood.

In 1993, over half of the losses and two-thirds of the NFIP payments from the Midwest floods were in Missouri. Higher than average payments in Missouri also reflect large payments to small businesses and other non-residential buildings, particularly in Chesterfield and elsewhere in St. Louis County.

Lessons Learned

If any good came out of the Midwest floods of 1993, it was the fact that this historic disaster prompted FEMA to review the efficacy of its programs and to ask whether existing programs and policies effectively served disaster victims. The disaster provided the catalyst for evaluating every aspect of FEMA's performance and prompted the following actions:

The disaster prompted review of floodplain management policies, culminating in the Report of the Interagency Floodplain Management Review Committee.

New emphasis was placed on hazard mitigation.

The successful Missouri Buyout Program was a direct result of the summer flooding and the commitment to moving people from harm's way.

Because of the enormity of the effects of the summer floods in Region VII, personnel from other regions and other federal agencies were called upon to help in the response and recovery efforts. A common theme in after action reports was the need for greater uniformity between regions in reporting requirements, billing requirements and procedural matters.

The need for standardization of training was also an after action item. For example, some public assistance inspectors from outside Region VII were unfamiliar with gravel roads and culverts.

The 1993 floods caused the first implementation of the Federal Response Plan in Region VII. Evaluations of its effectiveness were mixed, but overall positive.

"The Disaster That Wasn't" DR-1054-MO

June 2, 1995

Background

Beginning on May 13, 1995, Missouri experienced severe storms, tornadoes, hail, windstorms, and flooding. The entire state experienced above normal rainfall throughout May, with the heaviest rainfall concentrated in the northern two-thirds of the state. Emergency evacuation measures began as early as May 9. On May 17, 1995, Missouri Gov. Mel Carnahan declared a state of emergency for the entire state. Gov. Carnahan executed the State Emergency Operations Plan and authorized use of state and local agencies, personnel, and equipment necessary for the preservation of life, property, and the restoration of public facilities in the affected counties. On June 2, President Clinton signed a major disaster declaration for Public Assistance for 12 Missouri counties.

Even after the disaster declaration, severe storms, tornadoes, hail, windstorms, and flooding continued to batter Missouri. In the St. Louis area, a record 13-inch rainfall in a 24-hour period created sheet flooding and sewer backup conditions. The disaster declaration was amended on June 12 to make disaster assistance available for residents in 24 counties and the City of St. Louis. By the close of the incident period on June 23, residents in 61 Missouri counties and the City of St. Louis were eligible for federal disaster assistance under the Individual Assistance program and 43 counties were eligible for Public Assistance funding to repair disaster-damaged public facilities and infrastructure.

Missouri's St. Charles County was one of the first counties declared a federal disaster area. Renowned in flood insurance circles as one of the top three counties in the country for its repetitive loss claims, St. Charles County had actively participated in the buyout program following the devastation of the 1993 floods. The difference in 1995 was dramatic. In 1993, the federal government and the state of Missouri spent \$14,177,717 to help flood victims find temporary disaster housing during the flood crisis. In 1995, the total amount for the same services in the same area was only \$216,194. The total cost for buying out individual residences in the St. Charles County floodplain was \$14,617,424. The fact that the buyout project in St. Charles County cost only \$439,707 more than the 1993 disaster housing assistance program underscored the wisdom of putting disaster dollars into prevention.

Another result of the 1993 floods was the Governor's Flood Recovery Partnership, a partnership comprised of representatives from FEMA, state agencies, church-affiliated organizations, not-for-profit disaster relief and charitable organizations, and social policy advocacy groups. The partnership holds regular quarterly meetings and conference calls and works closely with state emergency management officials on disaster response and recovery issues.

During the flood of 1995, the Governor's Flood Recovery Partnership

monitored the Individual Assistance application rate and tracked the geographic areas where applications came from. The partnership was also involved in the preliminary damage assessment information in the immediate aftermath of the disaster.

tried to access and predict individual citizens' needs and the possible necessity of future services to address unmet needs.

Lessons Learned

The major lesson learned in the summer of 1995 was that the Missouri buyout program worked. Getting people out of harm's way by buying their substantially damaged homes and giving them

an opportunity to move out of the floodplain was, according to Missouri's State Emergency Management Agency (SEMA), a "phenomenal success."

Hazard Mitigation

Missouri applied all hazard mitigation grant funds from DR-1054-MO toward the continuation of the buyout program previously funded by DR-995-MO, DR-1006-MO and DR-1023-MO.

Governor Mel Carnahan set the following priorities for the 1995 buyout program:

Primary residences in the 100-year flood plain

Structures that are substantially damaged

Project must be cost-effective

The three Missouri communities that met those criteria head-on were Cape Girardeau, Commerce and Portage Des Sioux. Combined, the three buyout projects targeted 125 houses. The federal share of project costs was \$1,856,110.

The City of Piedmont was affected by the 1995 floods but funding for that city's acquisition projects included monies from DR-1023 and DR-1006.

"Turnkey" Operation DR-1096-WV

January 26, 1996

Background

In January of 1996, Region VII assumed its first "turnkey" disaster operation. Region III was already dealing with open disasters in Maryland, Pennsylvania, and Virginia when flooding made it apparent that a declaration was likely in yet a fourth state in the region, West Virginia. Rita Calvan, director of Region III, asked if Region VII would staff and operate a complete disaster field office in West Virginia. Given the assistance Region VII received from other regions during the 1993 Midwest floods, the response was an immediate and absolute "yes."

While FEMA regions frequently supported each other by sending staff or operations support to large disasters, this was the first time since the reorganization that Region VII had set up and run an entire disaster field office for another region.

Situation

The state of West Virginia experienced severe flooding beginning January 19, 1996. Flooding was concentrated along the Ohio River in the northwest area of the state and in the eastern portion of the state. Wheeling and Pocahontas County were heavily impacted.

On January 19, 1996, the Governor declared a state of emergency for 16 counties; executed the state emergency operations plan; and authorized use of state and local agencies, personnel, and equipment necessary for the preservation of life, property, and the restoration of public facilities in the affected counties. On January 20, the Governor declared 13 additional counties as disaster areas.

On January 25, 1996, President Clinton signed a major disaster declaration for both Public Assistance and Individual Assistance for West Virginia. When the state continued to experience flooding, the disaster declaration was amended on January 30 to include Public and Individual Assistance for six additional counties. One county, Hampshire, was declared for Public Assistance only. The incident period was closed on February 2.

The disaster field office lease was signed on the day of the declaration. The field office in Charleston was operational by January 27.

Lessons Learned

One lesson learned by Region VII during its first "turnkey" operation was the necessity of a regional liaison. A regional liaison serves as a special assistant to the federal coordinating officer and as an intermediary between the home region and the region that operates the disaster field office. This person can provide input and assistance to the federal coordinating officer and out-of-region management team regarding the state's historical disaster issues and challenges, as well as home region's traditional methods for meeting these challenges.

Storms, Tornadoes and Flooding DR-1230-IA

Declared July 2, 1998

Background

Due to heavy rains, severe storms and tornadoes throughout the state of Iowa in June 1998, major flooding occurred in counties adjacent to the Nishnabotna River and other rivers and streams in the southwestern corner of the state. Some areas that were not affected in the 1993 flooding received flood damage in 1998. The disaster was especially surprising for residents of Coburg, Ia., which had not been flooded since 1947.

On June 14, 1998 as a result of the severe storms and flooding caused by rains in excess of 13 inches in central and southwest Iowa, the governor declared a state of emergency and executed the state emergency operations plan. The governor also authorized use of state agencies, personnel and equipment necessary for the preservation of life, property, and the restoration of public facilities in the affected counties.

The presidential disaster declaration followed on July 2, making residents in those 10 counties eligible for Individual Assistance. Seven of the 10 counties were also designated eligible for Public Assistance for damages to public facilities. Due to the continuing and extensive damages, 79 of Iowa's 99 counties were eventually included in the presidential declaration for Public Assistance and Individual Assistance. Two counties were declared for Public Assistance only. In addition, 98 of Iowa's 99 counties received agricultural disaster declarations.

By July 8, the disaster field office was open in Clive, Ia. But even before that, the first housing assistance payments were approved on July 5, making a total of \$86,465 in disaster housing funds available for 31 individuals.

Lessons Learned

Two major initiatives were developed during DR-1230-IA.

1. In addition to damaging homes and personal property, the floods caused extensive damage to crops. As a result, a unique relationship was needed between FEMA and its federal recovery partners in the U.S. Department of Agriculture (USDA).

Individuals from undeclared counties were encouraged to register with FEMA for assistance. Those registrations often resulted in counties being added to the presidential declaration, thus making more programs available to individuals throughout the state. One highlight was explaining the Disaster Unemployment Assistance program as it relates to agricultural concerns.

2. A second major innovation developed during DR-1230-IA was initially called "Project 960." The low rate of return of disaster loan applications from the U.S. Small Business Administration (SBA) was thought to be the result of the higher than usual percentage of heads of households age 62 or older. A special outreach effort was made to contact each of the 960 applicants to encourage them to fill out and return the applications, hence the title "Project 960." That outreach program, later renamed the Elderly Outreach Initiative, is now standard procedure for all disaster operations in Region VII.

Killer Twister In Tornado Alley

DR-1273-KS

May 3, 1999

Background

The same central U.S. region that suffers severe spring and summer flash flooding is also prone to killer twisters. One of the most dramatic and fatal examples of this were the storms of May 3, 1999 in Oklahoma and Kansas that killed 49 people in the two-state region. The storms that spawned the tornadoes moved slowly, contributing to the development and redevelopment of individual tornadoes. In all, more than 70 total tornadoes formed in the Kansas and Oklahoma portion of the aptly-named "tornado alley." The massive number of tornadoes, combined with their severity and devastation, made this the most destructive tornado disaster in the United States in a generation.

In Haysville, Ks. (pop. 8,561), six lives were lost to an F4 tornado. The track of the Haysville tornado was 24 miles long, and was similar to that of the deadly tornado that hit the Golden Spur Manufactured Home Park in Andover, Ks. on April 26, 1991.

The Haysville tornado devastated the small town, especially its historic district, which was completely destroyed.

The office and warehousing areas of Norland Plastics, Haysville's largest employer, were destroyed while the production area was minimally impacted.

Several mobile homes in south Wichita were blown into a lake and several other homes were damaged. At least one of the fatalities was in the mobile home park. In all, six people were killed in Kansas and more than a hundred required some form of medical attention for injuries.

Damages

8,480 homes were affected in Sedgwick County
1,109 were destroyed
2,245 sustained major damage
5,126 sustained minor damage

Emergency Responses

Three shelters were opened by the American Red Cross. At the height of the storm more than 2,000 people took refuge in the shelters.

The disaster declaration was made on May 4, 1999. Sedgwick County, was declared first for both Public and Individual Assistance. On May 11, Reno County and Sumner County were added for Individual Assistance. Sumner County was also declared eligible for Public Assistance on May 14.

This was the second time in six months that Sedgwick County had been declared a disaster area. In less than one year, the state asked for and received three major disaster declarations and had one emergency declaration (EM-3126).

As of June 2000, total debris from the storms removed by local governments amounted to one million cubic yards; 99 percent of the debris was picked up in the first 30 days after the event.

Lessons Learned

Renewed emphasis was put on the importance of establishing a "Safe Room" in which to take refuge during disasters. An educational "Safe Room Tour" traveled to 19 cities in Region VII.

DeBruce Grain Elevator Explosion

EM-3126-KS

June 8, 1998

Background

On June 8, 1998 a massive grain dust explosion occurred at the DeBruce grain elevator. The facility, located southwest of Wichita, Ks., is among the world's largest of its kind. The explosion blew out both ends of the 246-silo reinforced concrete complex; severely damaged the central headhouse; collapsed much of the underground tunnel system; and, destroyed the overhead conveyor gallery and most of the silo roofs. More tragic still, the explosion killed seven men and injured 14 others.

Kansas Gov. Bill Graves declared a state of emergency. The following day, President Clinton declared an emergency for the affected area, allowing for the deployment of the Urban Search & Rescue Team from Lincoln, Ne. The Task Force (NE TF-1) was on the scene from the early morning hours of June 9 through midnight June 12.

Governor Graves requested a federal disaster declaration. Upon reviewing costs and emergency activities associated with the explosion, FEMA's Region VII determined that a declaration was not warranted. However, the regional director recommended that certain costs be deemed eligible under the President's emergency declaration. These costs were incurred by local government agencies in Sedgwick County from June 8 through June 30 and included costs to directly support the joint federal and local search and rescue operation (including the removal of deceased victims of the explosion) and costs associated with conducting other operations necessary to save lives and to protect property and public health and safety. The federal assistance did not include fire suppression expenses.

The Nebraska task force is comprised mainly of firefighters and rescue personnel from the Lincoln Fire Department. Four teams of search dogs and their handlers who live in southern Missouri are also part of the team and were deployed with the Lincoln firefighters and officers. A second Urban Search & Rescue Task Force is part of the Boone County Fire Protection District in Columbia, MO. The Nebraska and Missouri task forces are the only two in the four-state region.

Lessons Learned

This was the first time Region VII was involved in an emergency declaration of this type. A small staff of Region VII personnel was deployed to the scene and an office was hastily set up in a nearby hotel. Communications between the team leader at the explosion site and the federal coordinating officer were hampered due to poor equipment. In reviewing the response after the

disaster, it was agreed that coordination and information exchange would have been improved had the disaster field office been on site. A state presence was also needed. The operation was very successful due to the dedicated personnel on the Urban Search & Rescue

Papal Visit To St. Louis January 26-27, 1999

Background

Pope John Paul II made an historic visit to St. Louis, Mo. on January 26-27, 1999. President and Mrs. Clinton greeted him at the National Guard Hangar at Lambert-St. Louis International Airport. During his two-day visit, Pope John Paul II appeared at a youth rally with 22,000 guests in Kiel Center in downtown St. Louis and conducted Mass at the TWA Dome for 98,000 attendees. Before departing on January 27, the pontiff also conducted evening prayers at the Cathedral Basilica of St. Louis. Vice President and Mrs. Gore attended the departure ceremony at Lambert-St. Louis Airport.

Given the size of the event and the potential for terrorist activity, the papal visit warranted federal involvement and was classified as a Special Event Response Level (SERL) II event.

Under the authority of Presidential Decision Directives (PDD) 39 and 62, FEMA Region VII and other Federal Response Plan (FRP) agencies prepared for any potential terrorist action or large-scale emergency associated with Pope John Paul II's visit to St. Louis.

The preparations began in Region VII in November 1998. The staff also coordinated with the Federal Bureau of Investigation (FBI), U.S. Secret Service (SS), and other federal agencies to clarify each agency's role and responsibilities in the event that a federal response was necessary during the papal visit.

The FEMA base of operations was set up adjacent to the FBI Command Post in the Emergency Operations Vehicle (EOV) normally based in Denton, Tx. with the Mobile Emergency Response System (MERS). Liaisons from FEMA Region VII, Department of Defense (DOD), Public Health Service (PHS), Environmental Protection Agency (EPA), Missouri State Emergency Management Agency (SEMA), the FBI and the SS were assigned roles and responsibilities in the EOV during the period of January 26-27.

Lessons Learned

The papal visit provided an excellent training environment and an opportunity to build professional working relationships within FEMA and with partners from other federal, state, and local agencies, especially agencies such as the FBI and Secret Service that FEMA does not usually work with during natural disasters.

Y2K

Background

Y2K efforts were seen as an avenue of adapting an all-hazards approach to community and family emergency preparedness.

The fact that no states in Region VII encountered problems is a tribute to the advance planning on the part of thousands of people. Even though Y2K was a non-event in terms of a disaster, preparing for the new millennium presented an opportunity to advance the level of emergency

preparedness and to strengthen FEMA's partnerships with state, local, and private sector partnerships through outreach, planning and involvement in exercises.

Preparations

The Region VII RISC *Regional Y2K Workshop* was held on March 11-12, 1999 in Kansas City with 250 federal and state partners.

Region VII staff fulfilled frequent requests for informational mailings, public speaking engagements, radio and press interviews, attended conferences and workshops.

The region activated the Regional Operations Center (ROC) on December 28, 1999 with minimal staffing. Beginning December 31 through January 1, 2000, the ROC was staffed to support a Level 2 ROC operation.

Region VII staff participated in Emergency Operations Center (EOC) staffing for each of the four states during the Y2K rollover. State EOC activation within the December 28 through January 4, 2000 timeframe varied within the region, but all were staffed through the rollover.

The following deputy federal coordinating officers and state liaisons deployed to state EOCs on December 30 and returned to regional headquarters in Kansas City on January 2, 2000.

Innovations and Milestones

Hazard Mitigation

Damage Prevention

Region VII has assessed the hazards likely to affect its four states and developed a number of programs to deal with natural hazards endemic to the region. The Acquisition and Buyout program, developed on a large scale following the catastrophic Midwest floods of 1993, continues effectively today. Regional innovations within the National Flood Insurance Program have helped encourage participation by thousands of local communities in the region.

Earthquakes are the potential "nightmare scenario" looming over the region because of the New Madrid Fault and proactive programs are already in place to manage such a catastrophe.

Tornadoes are frequent events in the central states so Region VII has been a key player in the development of the Safe Room/Safe Schools Initiative.

Project Impact: Creating Disaster Resistant Communities is a nationwide FEMA initiative that encourages communities to take steps to lessen the impact of a disaster before it strikes. In Region VII, 19 communities are designated *Project Impact* communities as of August 2000.

Out Of Harm's Way: Acquisitions and Buyouts in Region VII

Missouri Community Buyout Program

Of the nine Midwestern states affected by the 1993 floods, the state of Missouri was undoubtedly the hardest hit. State officials estimate that damages totaled \$3 billion. Assistance to an estimated 37,000 Missouri families on that flood alone included \$41.7 million in FEMA Disaster Housing assistance and \$23.4 million in Individual and Family Grants (IFG). An additional \$40.1 million in low-interest loans was approved by the U.S. Small Business Administration (SBA) to cover disaster-related losses to homeowners and businesses. FEMA's Public Assistance Program allocated \$120 million to repair damaged public facilities. An addition \$7.8

million was paid under the disaster unemployment program. Needless to add, the costs from this historic disaster were staggering.

More than 216,000 households are located in designated floodplains in Missouri. In the aftermath of the 1993 floods, it became clear that the recovery effort offered a unique opportunity to create more permanent solutions to the increasingly frequent flooding problems in the state. While a few states and communities were exploring such options as relocating towns or elevating individual structures, the idea of a buyout program generated the most interest. Until this overwhelming crisis, no federal or state agency had attempted buyouts on the scale contemplated in 1993. For this reason, relevant state and federal agencies had to establish basic rules and procedures for working together and with homeowners interested in participating in the buyout program.

In response to the Midwest floods of 1993, Missouri designed and implemented the largest and most effective buyout program in the country.

Forty-two Missouri communities were funded through the 1993 buyout program, which moved willing homeowners out of the floodplains. First and foremost, this was a voluntary program. The local communities identified the primary homes to be purchased; asked the owners if they were willing to sell; bought and demolished the houses; and turned the land into open spaces, wetlands or recreational facilities. A one-time relocation benefit was offered to floodplain residents to assist in the purchase or rental of upland housing.

Each community had the right to decide for itself what it wanted to do with the acquired land. Arnold, Mo., for instance, turned the land into recreational area, building baseball or soccer fields. Others built hiking and biking trails, picnicking facilities, garden plots.

The Missouri buyout was funded with almost \$100 million that flowed through the state to local communities. This included \$30 million in FEMA 404 funds (Hazard Mitigation), \$28 million in FEMA 406 (Public Assistance mitigation) funds for demolition due to health and safety reasons, and \$42 million in funding from HUD's Community Development Block Grant program (CDBG).

Missouri Governor Mel Carnahan set the priority for the buyout by directing that the funds would be best used to buy flood-prone properties that were primary residences.

Governor Carnahan was so committed to helping people move out of the floodplains that he matched the Section 404 funds dollar-for-dollar with the CDBG funds. Eventually FEMA allowed Public Assistance Section 406 funds to be used for the demolition portion of the buyout. The Missouri buyout process was expedited by the state's commitment to the project.

This was a tremendous help for Missourians looking to move out of harm's way before the next flood, as well as for taxpayers who were spared the expense of another disaster victim.

Two small towns in Missouri took the buyout option to its fullest extent by relocating their entire communities out of the floodplain: Pattonsburg and Arnold.

Pattonsburg, Missouri

The town of Pattonsburg, Mo., situated on the Grand River in northwest Missouri, is a small farming community. In 100 years, it had flooded some 33 times. During the 1993 floods, the Grand River washed into town twice. The first flood lasted only two days before the waters receded. On July 23, however, the river rose again, this time cresting 16 inch higher. The 500-plus citizens of Pattonsburg said, in effect, enough was enough.

Working through the Green Hills Regional Planning Commission and with the Missouri State Emergency Management Agency (SEMA), the townspeople drafted and submitted a proposal to

relocate the entire town – 142 families and 18 businesses—to higher, safer ground. The ambitious project received national media attention.

In an address to the 62nd annual meeting of the Southern Governors Association in September 1996, Director Witt cited Pattonsburg as a proven example of federal/state cooperation, calling the buyout and relocation of the small farming community a national model.

“We can see from the Pattonsburg experience that this works,” Witt said. “It will save millions of dollars.”

The 1995 Missouri Floods

Few people anticipated that Missouri would get the chance to test the effectiveness of its buyout program as quickly as it did. But serious flooding struck the state again in the spring of 1995. Severe weather and flooding conditions were widespread over the state throughout much of May. By May 17, more than 45 counties across Missouri were affected, with road closures and flooding conditions, prompting Governor Mel Carnahan to declare a state of emergency. On June 2, President Clinton issued a disaster declaration (DR-1054-MO) for 12 counties. By the end of the incident period, 61 counties and the City of St. Louis had received Individual Assistance declarations and 43 counties had received Public Assistance declarations.

The third worst flood of record in many places, the May 1995 flood was considerably less devastating than its predecessor. Many of the same communities that flooded in 1993 were again inundated in 1995. But some 2,000 families were out of harm's way in 1995, thanks to the buyout program. Only 4,000 Missouri households applied for aid in 1995 compared to 37,000 in 1993. Disaster housing check payments amounted to \$4.1 million in 1995 compared to \$34.4 million two years earlier. Low-interest disaster loans from the U.S. Small Business Administration (SBA) dropped from \$57.4 million in 1993 to \$3.4 million in 1995.

Emergency officials from FEMA's Region VII and its counterpart at Missouri's SEMA have exhaustively documented thousands of individual buyout “success stories.” St. Charles County, once nicknamed “The Missouri Riviera” because of the high percentage of repetitive loss payments to flood insurance policy holders in that county, effectively illustrates the success of the buyout program. In 1993, the federal government and the state of Missouri spent \$14,177,717 to help individual flood victims find and fund disaster housing during the flood crisis. In 1995, the total amount for the same services in the same area was only \$216,194. The total cost for buying out individual residences in the St. Charles County floodplain was \$14,617,424 -- only \$439,707 more than the 1993 disaster housing assistance cost.

The 1995 buyout program in Missouri was funded with \$2.6 million from various sources. Missouri received \$1.6 million for Hazard Mitigation Grant Program (HMGP) following DR-1054-MO. Governor Carnahan used \$1 million in general revenue funds for the state's share of the mitigation grant match. Because Gov. Carnahan felt so strongly about continuing to move citizens out of harm's way, the federal/state match was 69-31 percent instead of the normal 75-25 percent.

The biggest difference between the 1993 flood and the 1995 flood was the success of the Missouri buyout program. Missouri applied all hazard mitigation grant funds from DR-1054-MO toward the continuation of the buyout program, previously funded by the Missouri flood disasters of 1993 and 1994.

Arnold, Missouri

Nicknamed "the poster child" of the Missouri buyout program, Arnold, Mo. took an aggressive approach to "flood proofing" even before the 1993 floods. Situated as it is on a peninsula where the Meramec River empties into the Mississippi River, Arnold had been hit by nine major floods since 1973. The town had participated in an early National Flood Insurance buyout program, known as the Section 1362 program, in 1980. Despite strict building codes, easement restrictions and other protective measures already installed, Arnold was inundated by floodwaters again in the summer of 1993.

According to Eric Knoll, Arnold's former city administrator, between 225 and 250 structures were affected by high water in the 1993 flood. The contrast in 1995 was dramatic. The buyout had effectively removed people and property from 86 residential structures, 143 mobile home pads and two commercial properties. Buyout dollars were also used to purchase 93 vacant lots. The results were obvious. In 1995, only 26 households in Arnold, Mo. applied for disaster assistance programs. In 1993, 528 households had applied for similar disaster assistance. Between the disaster housing assistance program, individual and family grant program, and low interest loans from the U.S. Small Business Administration (SBA), the total in 1993 came to more than \$2 million. Two years later, cost of these programs was estimated at less than \$40,000

Lincoln County, Missouri

Lincoln County was one of the first two counties declared for flooding in the July 1993 round of Mississippi River floods. A participant in the Missouri buyout program, the county acquired 226 residential properties. When the river rose again in 1995, local officials estimated that at least 150 of these properties would have been flooded again, but the structures were gone. The people were not at risk. Nor were the public facilities. As a result, Public Assistance dollars were not needed in Lincoln County to repair damaged or destroyed public utilities.

The federal dollars spent in 1993 on disaster relief to individuals in Lincoln County was \$6,184,688. An additional \$1,572,723 was appropriated for the county from FEMA's Public Assistance program, bringing the total federal outlay in Lincoln County to \$7,757,411. The entire Lincoln County buyout project cost \$3,479,360, or a mere 45 percent of the federal outlay in the 1993 flood.

The Region VII Hazard Mitigation team, formed as a unique team focused on the buyout program after the floods of 1993, received Vice President Gore's Hammer Award in September 1995, primarily in recognition of its "Benefits Clearinghouse." The Clearinghouse identified \$25 million in duplication of benefits. These benefits were recouped in the buyout process, resulting in considerable savings to the taxpayers.

Iowa and the Buyout Program

Between 1993 and 2000, Iowa initiated more than 46 acquisition or relocation projects. More than 1,000 properties were removed from flood-hazard areas in the state. More than 20 critical facilities, such as water treatment plants, were better protected. At least 66 projects were funded, with a total investment of \$54 million from FEMA, state and local community funds.

In the spring and summer of 1999, heavy rains and tornadoes hit Iowa. Two federal disasters were declared. In May, 16 counties were declared disaster areas as result of tornadoes and floods (DR-1277-IA). In July, 21 counties were declared disaster area because of flooding (DR-1282-IA). Eight counties in the disaster-affected areas had elected to participate in the buyout program after the 1993 floods. In those counties, a total of 271 families that had been flooded in 1993 no

longer lived in the floodplain. For example, in the city of Cedar Falls, the buyouts began in December of 1993. By the time the program was completed in September 1997, the city had purchased 99 properties, including 98 homes and one lot. Ninety-six of the homes were demolished. Two were moved to higher ground. Eighty-nine families moved out of harm's way. The total cost of the buyout program was \$4,330,000. The state of Iowa projects the 30-year benefit from this project will be over \$6.6 million in avoided damages. Since 1993, \$872,022 in damages had been avoided before the two disaster declarations of 1999. The total avoided damages for those events are \$5,344,355, over \$1 million more than the total cost of the hazard mitigation project.

Buyouts continue to be a high priority with Region VII Hazard Mitigation division. In May 2000, a major disaster was declared for three counties in Kansas hit by a tornado (DR-1327-KS). The region approved the buyout application from that disaster within a week. A flash flood in eastern Missouri necessitated a major disaster declaration for ten counties (DR-1328-MO) also in May 2000. That buyout application was approved in three days.

Innovations in Region VII

NFIP DESK REFERENCE

Developed by Region VII staff for local officials, this three-inch binder provides most of the information a local official would need to implement the National Flood Insurance Program within his/her jurisdiction.

The first two chapters are local community and state-specific. Local and state regulations can change and these two chapters can immediately be adapted to reflect regulatory changes. From Chapter Three on, information on all aspects of the national program is provided, including floodplain management, Community Rating System, hazard mitigation, community planning, prevention and preparedness and technical bulletins. It is a flexible tool providing state and local, as well as national, guidance.

COMMUNITY PROGRAM ASSISTANCE VISITS (CPAV):

Before the reinvention of FEMA, Community Program Assistance Visits (CPAV) were sometimes likened to an audit. The annual visits were focused narrowly on regulatory violations. Following the catastrophic flooding event of 1993, Region VII developed the concept of the Community Program Assistance Visit (CPAV), which is conducted in partnership with state and local officials, working as a team. Most often these visits occur during a disaster declaration, when community awareness and need for information are high.

Region VII conducts frequent NFIP workshops throughout its four states.

In Region VII, the implementation of the buyout program for substantially damaged properties is a major and ongoing innovative effort.

There are over 2,000 communities participating in the NFIP in Region VII.

Three of the four Region VII states (Iowa, Kansas and Nebraska) have had floodplain management regulations on their books for years. Missouri has no state statutes on floodplain management, but does have an Executive Order.

Earthquake Preparedness

Background

Any risk analysis of FEMA Region VII must include the possibility of earthquakes. The highest earthquake risk in the United States outside the West Coast is along the New Madrid Fault. The New Madrid Fault System extends 120 miles southward from the area of Charleston, Mo. and Cairo, Il., through New Madrid and Caruthersville, Mo., following Interstate 55 to Blytheville, Ark., and down to Marked Tree, Ark. The fault crosses five state lines and cuts across the Mississippi River in three places and the Ohio River in two places.

The New Madrid Fault is active, averaging more than 200 measured events per year (1.0 or more on the Richter scale), approximately 20 per month. Tremors large enough to be felt (2.5-3.0 on the Richter scale) are noted annually. Every 18 months the fault releases a shock of 4.0 or more, capable of local minor damage. Magnitudes of 5.0 or greater occur about once per decade.

These can do significant damage and can be felt in several states. Missouri has 16 counties and the City of St. Louis at risk in the eastern one-third of the state.

Damaging temblors are not as frequent as in California, but when they do occur, the destruction covers more than 20 times the area because of underlying geology. A damaging earthquake in this area (6.0 or greater) occurs about every 80 years. The last one of this magnitude was in 1811-1812. The Central United States Earthquake Consortium (CUSEC) is a partnership of the federal government and the seven states that would most likely be affected by an earthquake in the New Madrid Seismic Zone: Arkansas, Illinois, Indiana, Kentucky, Mississippi, Missouri, and Tennessee. Established in 1983 with funding from FEMA, CUSEC's primary mission is the reduction of deaths, injuries, property damage and economic losses resulting from earthquakes in the Central United States.

In partnership with the State of Missouri, Region VII personnel assisted in establishing the Missouri Structured Assessment and Visual Evaluation (SAVE) program. This program follows California's model, which FEMA funded through the Applied Technology Council (ATC-20), for "Post-Earthquake Evaluation of Structures" course. It is a volunteer program sponsored by the Missouri Society of Professional Engineers (MSPE), American Society of Civil Engineering (ASCE), American Institute of Architects (AIA), and Consulting Engineers Council of Missouri (CECMO). Currently, SAVE has trained over 1,600 personnel with 864 certified as inspectors with various degrees of expertise.

Region VII assisted Missouri State Emergency Management Agency (SEMA) in securing funding through a private-public partnership with GE/Employers Reinsurance Corporation of Johnson County, Ks., for the development of the *Earthquake Map Catalog & Reference Guide*. This booklet was developed by the Center for Earthquake Studies at Southeast Missouri State University in Cape Girardeau and Missouri SEMA, which provided technical review. This guide shows all available maps published in the central United States that address the effects of earthquakes.

As part of Region VII's Hazard Mitigation division, the earthquake program provides state and local officials, the private sector, and the general public with essential advice and assistance regarding earthquake risk in the central United States.

The region develops, coordinates and conducts educational workshops, training sessions, seminars for state and local government officials, the private sector, and citizens

Works with state and local officials to prepare inventories of, and conduct seismic safety inspection of, critical structures and lifelines

Develops plans for retrofitting existing structures that pose threats to life and property from a major earthquake or tornado.

Region VII has drafted a hazard-specific incident appendix for the event of a New Madrid earthquake of 6.5 or greater magnitude on the Richter scale. It is a tasking mechanism in order to immediately respond to such an event.

When put into effect, it will implement procedures for:

- Notification/activation of appropriate personnel
- Mobilization/deployment of key resources

Activation of pre-determined sites for the Disaster Field Office, Mobilization Center and Staging Areas.

The major assumptions that drove the creation of this plan are:

- The probability of a catastrophic earthquake in the New Madrid Seismic Zone is high.
- FEMA will activate the response structure.
- Basic human needs will be a priority.
- An integrated and well-coordinated response by federal agencies will be required. In support of the Federal Response Plan, 27 federal agencies and the American Red Cross will perform primary and support Emergency Support Functions (ESFs).
- Prioritizing delivery of scarce resources will be difficult.
- Facilities to accommodate massive resources are required.

Essential features of this plan include:

- Activation of the regional operations center
- Identification of key operating facilities in Missouri
- State emergency operations center activated
- Search & rescue teams deployed
- Staging areas have been identified
- Coordination with federal and state agencies and American Red Cross

A New Madrid earthquake would affect more than one region and a multi-regional response would be required.

On February 17 through 21, 1997, Region VII joined Regions IV, V, and VI, CUSEC, and officials from Arkansas, Illinois, Indiana, Kentucky, Mississippi, Missouri, and Tennessee in the Interactive Policy Seminar, Catastrophic 97 (CAT-97). Held at Camp Joseph T. Robinson National Guard Learning Center in Little Rock, Ark., the seminar was designed to identify and address the difficult issues and concerns that the emergency management community would face following a catastrophic earthquake.

One Missouri city in particular has focused on earthquake preparedness. Cape Girardeau is situated on the banks of the Mississippi River and in the heart of the New Madrid Seismic Zone. The city faces serious flooding threats every year as well as the possibility of severe earthquake damage. As a *Project Impact* community, officials in Cape Girardeau have incorporated earthquake preparedness into its efforts to shape itself into a disaster resistant community. With assistance from the *Project Impact* grant, the city is installing seismic protection valves at the Gordonville Road Water Tank #1. This system is intended to prevent the rupture of the connection to the distribution system at the tank and isolate it from the distribution system. This would minimize the loss of treated water and reduce the risk of cross contamination due to distribution piping failures in a seismic event. When complete, Cape Girardeau will be the first community in the Midwest with seismic protection valves on a water storage tank.

On September 2, 1999, city officials tested its earthquake preparedness by participating in a countywide earthquake drill, based on a 6.7 magnitude quake. The city's emergency operations center was activated and local businesses were asked to participate by examining their own preparedness.

Since 1996, Cape Girardeau has required all new commercial structures to be constructed to seismic standards.

The Cape Girardeau School District constructed its newest elementary school according to seismic codes.

The Bill Emerson Memorial Bridge in Cape Girardeau, scheduled for completion in 2003, will become the Midwest's first bridge to contain seismic research equipment through the efforts of Missouri's Department of Transportation. The information gathered from this equipment will be monitored by the U.S. Geological Survey (U.S.G.S.) and will be used to improve future seismic designs. This bridge is a cable-stay bridge that is designed to withstand an earthquake of an 8.2 magnitude.

Using FEMA's new earthquake loss estimation software tool, HAZUS, Cape Girardeau has completed several scenarios and generated reports on the losses from various magnitude earthquakes. Those scenarios will be used for prioritizing mitigation projects and for reviewing emergency response/recovery plans.

Surviving In "Tornado Alley": The Safe Room Initiative in Region VII

Following the May 1999 outbreak of tornadoes in Missouri and Oklahoma in which 10,000 homes were destroyed, FEMA's Building Performance Assessment Teams (BPATs) deployed to the fields and concluded that "the best means to reduce loss of life and minimize personal injury during any tornadic event is to take refuge in specifically designed tornado shelters...

Region VII in the Forefront of Education and Information

In March 1999, Region VII launched a Safe Room Initiative with a four-state media campaign. The focus was publicizing FEMA's new (October 1998) publication, *Taking Shelter from the Storm: Building a Safe Room Inside Your House* to local building and media organizations. The Kansas City Home Builders Association explored having a safe room in one of its homes on a future home tour and the possibility of having a model for its annual Home Show. Channel 9, the ABC affiliate in Kansas City, ran a half-hour broadcast on severe weather and included FEMA web site and address for further disaster preparedness information. The station also planned to publicize safe room information.

Mobile Mitigation Safe Room Tour

Following the May 3, 1999, tornado disasters in Missouri and Oklahoma, the Mobile Mitigation Safe Room Tour spent June 22 to June 26 visiting retail businesses in 19 cities in Kansas. The tour, which included four teams of Hazard Mitigation specialists, was an initiative of FEMA headquarters designed to promote the construction of safe rooms in areas recently hit by tornadoes or prone to tornadoes or other high-wind events.

The teams staffed day-long site visits at retail businesses in cities selected by FEMA and the Kansas Division of Emergency Management (KDEM) staff. Media coverage was extensive and positive.

"Safe Room Extravaganza" Sioux City, Iowa

On July 28, 1999, Region staff VII Director John A. Miller and Region VIII Director Rick Weiland joined state and local emergency managers, the American Red Cross and numerous local business partners in Sioux City, Ia. for a Public Safety Awareness Day. This "Safe Room Extravaganza" took place in what is called the SiouxLand area, which includes portions of Iowa, Nebraska, and South Dakota in the Sioux City metropolitan area.

Using a \$50,000 grant from FEMA, as many as seven safe rooms were to be constructed in the metropolitan area, including one 15' x 20' safe room in The Salvation Army Day Care Center, only the second one in the country attached to a day care center.

Partnership with keepSafe Industries

Region VII signed a Memorandum of Understanding with keepSafe Industries, a national *Project Impact* partner. Under the agreement, keepSafe committed to providing 12 safe rooms for *Project Impact* communities in Region VII.

A full-scale mobile safe room was built in partnership with the Merriam, Kansas Home Depot and Johnson County, Kansas. FEMA provided a trailer and paid for materials at cost. Home Depot provided the labor.

A full-scale mobile safe room was built in partnership with Johnson County Community College, Lowe's Hardware, Johnson County, Kansas, and Wall Ties & Forms. This is a model of the wood frame with steel sheathing design out of FEMA publication 320. Lowe's provided the materials at a reduced price. The community college provided labor. Wall Ties & Forms donated the steel door.

A full-scale mobile safe room was built in partnership with Ruud Building Systems in Wichita, Kansas. FEMA provided the trailer and Ruud Building Systems provided the materials and labor. This is a model of the concrete Safe Room in FEMA publication 320.

Wind Resistant Construction and Tornado Safe Rooms

On November 11, 1999, a *Project Impact* team in Johnson County, Ks. organized a presentation by Dr. Ernst Keisling of the Wind Engineering Research Center at Texas Tech University. Josh Fowler of the Tulsa Area Home Builders Association also made a presentation at the conference, which was sponsored by *Project Impact*, Johnson County Community College and the HomeBuilders Association of Greater Kansas City. More than forty local builders, codes officials, realtors, emergency managers and others attended the event.

The presentation was entitled "Wind Resistant Construction and Tornado Safe Rooms." The event was directed toward building code officials and planning officials, builders, real estate agents, and other public and private individuals involved with improving the quality and safety of construction in the county.

Parsons, Kansas

On April 19, 2000, a tornado ripped through Parsons, Ks., causing damages that required a presidential disaster declaration for three southeast Kansas counties (DR-1327-KS). When the disaster recovery center opened, three model safe rooms were on display, brought in from Kansas State University and Johnson County, both *Project Impact* communities in Kansas. On May 22, two free presentations on safe room construction and school design were held in Parsons.

Safe Schools Initiative

A major lesson learned from the tornado destruction of recent years is that essential facilities and other establishments serving the public (schools, hospitals, and critical facilities) should be designed with shelters or have shelters retrofitted or added. Dr. Ernst Kiesling, of the Wind Engineering Research Center at Texas Tech, and FEMA are currently working on designing tornado community shelters, i.e. safe rooms, for larger facilities such as schools, day care centers, manufactured home communities, and multi-family housing.

Following the May 1999 tornadoes, the Wichita Unified School District 259 asked officials with FEMA's Region VII for technical assistance in evaluating their existing facilities. School officials wanted a tool to help them decide what schools would be best targeted for the Hazard Mitigation funds available under the disaster declaration. Through the Hazard Mitigation Technical Assistance Program (TAP), Region VII contracted with Greenhorn & O'Mara, Inc. to provide technical assistance and training and to develop an evaluation checklist.

After the fieldwork was completed, FEMA presented a one-day training workshop titled "Evaluating Refuge Areas in Kansas Schools" in Wichita for the school district, emergency management specialists, and designers, architects and engineers who work with the district. This initial workshop included evaluation of building plans and a site visit to the school itself to evaluate its disaster readiness.

A "Solving the Tornado Safety Puzzle for Schools" workshop was held June 29 and 30, 2000 in Topeka, Ks. The workshop was sponsored by FEMA's Region VII, the Kansas Division of Emergency Management, the Joint Legislative Building Committee, National Weather Service, the Kansas State Department of Education, International Conference of Building Officials, American Institute of Architects, and the Kansas Fire Marshall's office. Officials from *Project Impact* communities also attended the workshop.

Other Safe Schools Programs in Region VII

Three elementary schools in Wichita are building new safe rooms in their facilities as part of the Wichita Disaster Safe Room Hazard Mitigation Grant Program (HMGP) Initiative. Jefferson Elementary and Hyde Elementary received funding from FEMA's HMGP. Chisholm Life Skills Center received funding under FEMA's Public Assistance Program. All three schools will construct new multi-purpose rooms that meet the National Performance Criteria for tornado shelters.

Johnson County, Ks., a *Project Impact* community, builds approximately one new school a year. School officials plan to incorporate the safe room concept into all new schools in their district. Region VII is working with Region VIII and the Department of Education to develop a joint effort to address safe schools. The effort will address the need for emergency plans for natural hazards and terrorist activities, as well as for safe rooms or refuge areas in schools.

Project Impact in Region VII

Hazard mitigation efforts and programs are growing as communities learn about *Project Impact* and the opportunities for getting technical, educational, and financial help in ensuring their communities' futures.

Region VII has designated 19 *Project Impact* communities. The first *Project Impact* communities in the region were named in 1998. They were Denison, Ia., Riley County and the City of Manhattan, Ks., Cape Girardeau, Mo., Beatrice, Ne.

Of the 19 *Project Impact* communities in Region VII, six are designated non-grant communities. Even though these communities received no monetary grants from FEMA, the people in these communities have committed to the goals of *Project Impact* and are forming partnerships at every level. By working with FEMA, state, county and local emergency management officials and organizations, these communities are enlisting their individual, business and corporate citizens to reduce the impact of future disasters on their communities. Chambers of commerce, the Institute for Business & Home Safety, Southwestern Bell and many other members of the business communities are forming multi-level partnerships with citizens as well as city, county, state and federal representatives to reduce disaster risks in their communities.

***Project Impact* Communities Of Region VII**

The following Region VII *Project Impact* communities are developing cooperative mitigation programs dedicated to reducing damages and losses in future disasters.

Iowa:

- 1998—City of Denison
- 1999—City of Des Moines; City of Cherokee
- 2000—City of LeMars; Linn County/Cities of Cedar Rapids, Marion, Hiawatha & Robins, Des Moines

Disaster Risk

Des Moines, located in central Iowa, has a population of 193,187 and is located near the junction of the Raccoon and Des Moines Rivers. The area is subject to disasters caused by severe winter storms, tornadoes, thunderstorms, flooding and hazardous material spills. Recent federally-declared major disasters affecting Des Moines include the 1997 disaster due to severe snowstorms and the 1998 disaster due to severe storms, tornadoes and flooding.

Public-Private Partnerships

Beginning in 1997, a group comprising business leaders and federal, state, county, and local governments began meeting on a bimonthly basis to organize and coordinate a sub group of private sector planners to respond to needs prior to and during a disaster.

Partnerships with local TV stations and Polk County Emergency Management to provide discounted weather radios to local residents

Instituted private sector liaison position in county Emergency Operations Center

Business partners purchasing Radar-Net and EMWIN for alerting of impending severe weather

Planned mitigation activities include:

- Increase readiness and capability to respond to severe weather
- Formalize evacuation planning for downtown
- Hazard mitigation planning for downtown area with private and public sectors
- Terrorism planning with private and public sectors

Linn County

Disaster Risk

Linn County in east central Iowa includes the cities of Cedar Rapids, Marion, Hiawatha and Robins (a non-grant community) and has a population of 168,767. The area is subject to flooding, tornadoes and winter storms. Flooding can occur at any time of year due to the

combination of a network of rivers and creeks plus melting snow in the spring and heavy rains at any time.

Public-Private Partnerships

The Linn County Emergency Management Agency participates in the National Flood Insurance Program (NFIP) and in the Hazard Mitigation Grant Program (HMGP). The agency works with businesses throughout the community on business disaster recovery, worker safety, and shelter and evacuation plans. Disaster Commitment and Action

The Linn County Regional Planning Commission has accomplished the following under its storm water master plan:

Enacted a policy requiring structures to be at least one foot above the 100-year floodplain

Established erosion control and storm water management ordinances.

Participation in the FEMA Hazard Mitigation Grant Program to buyout 11 floodplain properties and dedicate the acquired land to open space.

Project Impact Communities in Kansas (with year of designation)

- 1998—Riley County/City of Manhattan
- 1999—Johnson County; City of Kinsley
- 2000—Butler County; Butler County Cities of Andover, Augusta, Benton, Cassoday, Douglass, Elbing, El Dorado, Latham, Leon, Potwin, Rose Hill, Towanda & Whitewater
- Riley County/Manhattan

Disaster Risks

Manhattan, with a population of 43,836, is the county seat of Riley County. The Kansas and Big Blue rivers dramatically affect the area. Although two major flood protection structures were constructed, approximately 45,000 people in and near Manhattan are still vulnerable to flooding.

Private-Public Partnerships

The potential for mitigation partnerships with the business community are great given the number of major corporations and organizations in the area, including the U.S. Army, Kansas State University, Manhattan Medical Center, Steel & Pipe Company, USDA Grain Research Lab, Idelman Telemarketing, and Quaker Oats.

Disaster Commitment and Action

Since 1993, Riley County has purchased some 500 homes in the floodplain with financial assistance from FEMA and the Kansas Department of Commerce & Housing. The county, the city of Manhattan, and the Unified School District 383 are developing a master plan for park facilities for land that was acquired to ensure that it remains a permanent open space.

FEMA has provided \$74,000 in Hazard Mitigation Grant Program (HMGP) funds to produce a flood-predicting model for the Northview area. Further, all flood insurance rate maps are in the process of being digitized to improve floodplain management.

In addition to these measures, Riley County and Manhattan have:

Placed 25 advance-warning sirens in the urban area and proposed four additional sirens

Adopted regulations requiring the installation of storm shelters in large mobile home parks

Begun developing a geographic information system to make better decisions regarding building development

Johnson County

Disaster Risks

Johnson County in east central Kansas is a rapidly growing 476 square-mile area with a growing population estimated at 435,000. The Kansas River and its tributaries flood repeatedly and, according to FEMA data, losses under the National Flood Insurance Program (NFIP) exceed \$8 million. Severe flooding affecting the entire area occurred in 1993 and 1998.

Johnson County's greatest hazards are high winds and tornadoes during spring and summer months and ice and snowstorms during late fall, winter and early spring. Further, the county is under a moderate risk of earthquake.

Private-Public Partnerships

Several chambers of commerce, coordinated by the Johnson County Presidents Council, coordinate business community input and outreach through education and information programs and processes. In addition, the Development and Retention Council of Northeast Johnson County and the Southwest Johnson County Economic Development Council serve the county.

Disaster Commitment and Action.

Bought out many businesses in Merriam after the 1993 floods with Hazard Mitigation Grant Program funds and the Kansas Small Cities CDBG Disaster Recovery Program

Undertaken the preparation of a hazard mitigation program with the Kansas Department of Commerce and Housing

Project Impact Communities in Missouri (with year of designation)

- 1998—City of Cape Girardeau
- 1999—City of St. Joseph; City of Maryville
- 2000—City of Neosho; City of Piedmont; City of Bolivar; City of Hannibal

Cape Girardeau

Disaster Risk

Cape Girardeau, a southeastern Missouri city with a population of nearly 40,000, is located along several creeks and sited primarily in the floodplain of the Mississippi River. The creeks flood during localized flooding events. During 12 of the past 15 years, the river rose above flood stage. The city was included in the federally declared flood disasters of 1993 and 1995.

Cape Girardeau lies on the New Madrid fault system, the greatest earthquake risk east of the Rocky Mountains.

Public-Private Partnerships

Through their local chamber of commerce, Cape Girardeau is establishing a working relationship with local businesses to address their disaster-readiness issues and needs. In addition, the city plans to use existing opportunities for cooperative hazard mitigation partnerships with Southwestern Bell, the Institute for Business & Home Safety and NationsBank.

Disaster Prevention Commitment & Actions

In 1997, the Cape Girardeau City Council declared the city's commitment to becoming a disaster resistant community.

Funded a combined Sewer Overflow Program to separate storm water and sanitary sewers in old areas of town with a ¼-cent city tax passed by voters in 1994;

Acquired and demolished 100 properties using \$1.7-million provided in 1995 by the Hazard Mitigation Grant Program;

Completed seismic retrofitting in schools and city buildings, using \$25,000 from the National Earthquake Hazard Reduction Program;

Elevated water intakes along the Mississippi River for the Portable Water Treatment Plant and elevated access roads to Wastewater Treatment Plant, Transfer Station and Lone Star Industries;

Currently seeking a U.S. Army Corps of Engineers flood control project to effect channelization and to create a 154-acre flood detention, and also establish priorities to protect schools and water system from disasters.

St. Joseph

Disaster Risk

St. Joseph, with a population of 72,000, is in northwest Missouri on the banks of the Missouri River. Although tornado damage has been limited, the threat of tornadoes is a reality. The city also faces earthquake threat from the NeMcha Fault, which runs some 60 to 70 miles west of the city. St. Joseph's primary disaster threat is flooding. Devastating floods occurred in 1881, 1952 and 1993. In addition, there have been several flash floods on the city's two major creeks.

Public/Private Partnerships

The St. Joseph Chamber of Commerce is working to forge partnerships with local businesses to make St. Joseph less vulnerable to the devastating effects of disaster.

Disaster Prevention Commitment & Actions

St. Joseph has adopted the Building Officials and Code Administrations (BOCA) that regulates building and fire codes. A cooperative study with the U.S. Army Corps of Engineers and the State of Kansas to study the Missouri River levee system to determine what is needed to re-certify the levees and keep affected areas in the NFIP;

Project Impact Communities in Nebraska (with year of designation)

- 1998—City of Beatrice
- 1999—City of Superior
- 2000—Cities of Scottsbluff & Gering/Scotts Bluff County

Beatrice

Disaster Risk

Beatrice, located in southeastern Nebraska, has a population of 12,928 and lies in the valley of the Big Blue River. The Big Blue and its tributaries have flooded repeatedly, including in 1941, 1947, 1951, 1973 and 1993. Through the years, not all damages have been covered by the National Flood Insurance Program.

Public-Private Partnerships

Major employers in Beatrice that could be partners and resources for Project Impact include a variety of 38 major wholesale firms that account for annual total income of \$80 million and six financial institutions.

Disaster Commitment and Action

Beatrice regulates development to comply with federal floodplain management standards. As part of its flood mitigation planning, the city bought out over 70 flood-damaged properties following the 1993 flood.

Superior

Disaster Risks

Superior, also known as "The Victorian Capital of Nebraska," with a population of 2,397, is in the southeastern part of Nebraska in the Republican River basin. Four creeks dissect the town, while the Republican River parallels the town on the south, running west to east just outside city limits. Of the four creeks, Lost Creek has historically caused the major flooding problems. The creek, which flows on the west side of Beatrice, has a long history of serious flooding and bank erosion. The most recent event was in 1996. The problem is caused by inadequate drainage for the 19-square-mile watershed of Lost Creek. The current flood capacity of the Creek is less than a 10-year flood event.

Superior is subject to the other traditional Nebraska weather problems, such as tornadoes, high winds, hail storms, blizzards, ice storms, and drought.

Private-Public Partnerships

The Superior Economic Development Council, Chamber of Commerce and the Superior Ambassadors work together with the city for the betterment of industry and economic development.

Disaster Commitment and Action

To ensure the availability of flood insurance for its residents, Superior regulates all development to comply with federal floodplain management standards.

Reinvention

FEMA's Region VII made major contributions in the development of some centralized functions such as the Disaster Finance Center. It provided input and example on the viability of a centralized processing function in the running of its own central processing office during the 1993 floods.

Financially, the agency found that too many disasters remained officially open, with obligated funds tied to old disasters. An effort to develop streamlined closeout procedures required a revised approach to disaster grants management.

FEMA's Public Assistance Program was targeted for a complete overhaul. This was accomplished over two years, 1996-1998, with a Business Process Reengineering (BPR) Program. Another essential aspect of reinvention was communication. The FEMA Public Affairs function was reorganized to more effectively coordinate information and present a clear story of the agency, its activities and programs.

Moving In New Directions

Central Processing Office

Background

In the summer of 1993, Region VII established a Central Processing Office (CPO) at a building complex owned by the General Services Administration (GSA) in Kansas City, Mo. to handle the financial and administrative processing for all four Region VII states affected by the Midwest floods, as well as the processing of disaster applications.

The CPO handled the processing of vendor payments, payroll, travel, and financial transactions. It was unusual at that time to consolidate the processing of the administrative and financial activities of a disaster outside of the disaster field office (DFO).

In addition to the consolidated processing office, a consolidated "hot line" was also established in the same center to answer questions of flood victims who had registered for assistance. The hotline itself employed nearly 100 people. The Kansas City CPO was also assigned responsibility for handling the Public Assistance projects in the western half of Missouri.

While the CPO concept had been used in other disasters, with the 1993 floods the problem again was scale and dealing with a simultaneous, multi-state disaster. The goal in 1993 was to achieve economy of scale to increase efficiency and reduce resources required in running multiple operations. In full operation, the Central Processing Office employed over 600 people.

In 1994, when the Denton, Texas teleregistration number was overwhelmed with calls from victims of the Northridge, California earthquake, Region VII CPO was enlisted for a week to help process those calls.

Other significant lessons learned from the 1993 floods:

The way in which the CPO concept was implemented in the Midwest flood response and recovery effort was used in the evaluation process for the development of the National Processing Centers. The Hazard Mitigation team that operated out of the CPO developed a "Benefits Clearinghouse" which identified \$25 million in duplicated benefits to flood victims, which were recouped in the buyout process.

Grants Management And Disaster Closeout

Background

In 1996, the Operations Support (OS) Division in Region VII began applying to disaster grants management many of the same principles used in non-disaster grants management. It formalized many of the processes and procedures for systems reconciliation and analysis of financial information. The roles of closeout team members were outlined. A timeline for programmatic closeout was outlined that concurred with the timeline referenced in the Director's memo. On August 31, 1998, Region VII hosted the 1st Annual Regional Grants Management Workshop at Regional VII offices in Kansas City. More than 30 people attended, including Disaster Finance Center staff, regional staff, and a staff member from FEMA headquarters. The purpose was to discuss grants management issues and to conduct workshops on the grant reconciliation

process. This was the first time that disaster and non-disaster grants specialists had been brought together to address grants management issues as a whole.

Lessons Learned

The initiative began as a focus on disaster grants, but has yielded benefits in the non-disaster field as well. The need to address issues of regulatory interpretation, cash management/financial analysis and systems reconciliation in non-disaster grants management have been brought to light as well as the need to streamline administrative processes.

The identification and development of grants management as a major component to the grant life cycle has become a national initiative for FEMA. The grants management program has yielded identification of roles and responsibilities of OS grants staff, changes in interpretation of regulations, changes in policy, and an initiative for annual training requirements and annual workshops.

Partnership

A partnership is a way of working together to achieve mutually agreed upon outcomes. Developing strong partnerships requires constant communication, regular training, shared information and respect for each agency or business's role in reaching the positive outcome. In Region VII, the partnerships with state emergency management agencies and program staff have been enhanced by meetings, seminars and summits. *Project Impact* has attracted many private sector partners as well.

Special Regional Grants and Assistance

Emergency Management Planning and Assistance (EMPA) program

The Emergency Management Planning and Assistance (EMPA) program was initiated in 1998 to provide FEMA regions with funds to support special projects to advance regional goals. It was the first time the regions had a budget source that was not tied directly to a program and could be used to fund unique special projects within the region.

FY-1998 EMPA Program

In 1998 Region VII was awarded funds to support two of the nine projects identified. The region chose two of its highest priority projects, a "Partnership Summit" and the Public/Private Sector conferences with states.

Partnership Summit

On March 3-5, 1998 the region hosted the Partnership Summit in Kansas City. The objective was to strengthen partnerships and coordinate multi-year planning and programs to accomplish agency, regional and state strategic goals and objectives. Based on these goals, the summit was titled "Partnership 2000."

This was the first time such a conference was held in the region. An extensive agenda covering all aspects of the emergency management mission was developed. The summit also featured sessions on *Project Impact* and the Public/Private Partnership Initiative.

A list of issues that the states had identified as important in accomplishing their goals and objectives.

Public/Private Partnership

Training and Exercise 2000
Mitigation Programs (HMGP/FMA/NFIP)
Technology in Disaster and Emergency Management
Disaster/Response and Recovery/Disaster Grants

REP 2000

Project Impact

The breakout sessions were a key part of the summit in that they provided opportunities to work together by collaborating on specific topics identified as important to our success. In keeping with the theme of the conference, the sessions were designed to stimulate brainstorming among the participants. Each session was facilitated and the session results were recorded. Each breakout session was designed to complement its topic. Some sessions used presentations to stimulate brainstorming among the participants and others relied principally on the group to work the issues presented.

Summit Outcomes

A "Partnership 2000 Region VII Summit Report" was published on June 4, 1998 to capture feedback and offer a blueprint that could be used to strengthen both partnerships and programs in the future. The report provided linkages between those critical issues and our strategic goals as well as identifying barriers and the desired outcomes for the year 2000 and beyond.

Public/Private Sector Conferences

In 1998 Region VII also supported the Public/Private Sector conferences, which was hosted by the participating states. Each state in the region utilized grant funds under the EMPA program to conduct conferences to encourage greater partnering between the public and private sectors. These conferences held in each state promoted FEMA's initiative to attract more pre-disaster involvement between the public and private sectors.

FY-2000 EMPA Program

Safe Schools Research and Development Project

In 2000, Region VII awarded a \$30,000 grant to Linn County, Iowa Emergency Management to conduct a survey of its schools. This proposal was to provide advanced emergency response plans for the five public school districts in the Linn County metropolitan area of Cedar Rapids, Marion, Hiawatha, and Robins. The metropolitan area has been designated as a *Project Impact* (non-grant) community. This proposal is a baseline project. At the conclusion of this project, any schools and public buildings, as well as private buildings, can be added to the database using other funds than those in this proposal.

The benefit of this project to the community is linking the school's emergency plans to the community's emergency plans to better manage any emergency that could occur in and around the schools.

The pilot program addressed by this grant proposal would cover the middle and high schools of these five districts. Additional elementary schools will be added later when other funds are available. In addition, the plans for other special or critical facilities such as child and adult day

care, hospitals, group homes, public buildings, local, state, and federal office buildings, and even industrial facilities could be added later as other funds become available.

State Safe Schools Activities Project

Heartland Safe Schools Conference

The region used EMPA funds to support the Heartland Safe Schools Conference on April 5, 2000 in Kansas City. FEMA co-sponsored this event with the U.S. Department of Education, Kansas State and local education organizations. The conference focused attention on various aspects of safety, from structural safety to identifying and getting assistance for troubled youth. The region also participated in a safe school design contest for students as part of the overall Safe Schools Activities Project. A local contestant received an award for his design in Washington, DC.

FY-2000 Program

Joint Region VII, VIII, and IX Building Disaster Resistant, Safe Schools Initiative

This multi-regional initiative provided each region with \$50,000 in funds to work with the federal interagency community and to assist and support states and local jurisdictions in the national effort to create disaster resistant, safe school environments. The initiative provides a timely link with the release of FEMA's recent publication *Design and Construction Guidance for Community Shelters*. This guide targets engineers, architects, building officials, and prospective shelter owners, providing important information about the design and construction of shelters for extreme wind events that is not currently available in other design guides or in building codes or standards.

The Elderly Outreach Initiative

Project 960

During the summer flooding in Iowa (DR-1230-IA), a unique problem emerged, for which FEMA Region VII developed a creative solution.

According to demographic statistics, the average age of Iowa's farmers is 59. Because many of the disaster assistance applicants in Iowa were farmers and because such a small percentage of the elderly population was following through with the application process (i.e. returning their SBA loan applications), it was determined that a more concerted effort was needed to reach these applicants and explain to them the importance of returning their applications.

The campaign included Region VII Community Relations personnel, representatives from the U.S. Small Business Administration (SBA), and local and state agencies dedicated to the elderly. Because of Privacy Act constraints, it was not possible to turn the list of applicants over to the state or local agencies, so the resources within the disaster field office were enlisted. Initially, the effort was called "Project 960" because there were 960 applications for which the head-of-household was 62 or older; hence, 960 applicants that FEMA wanted to contact directly to make sure these people understood how and why the SBA forms were necessary.

Today, Project 960 has been formalized in Region VII as the "Elderly Outreach Initiative." Typically, 30 to 60 days into the application process, Elderly Outreach is initiated. Disaster Housing and Community Relations personnel make telephone calls to every single applicant who is the head of household and age 62 or over. The purpose of the calls is to discuss long-term recovery plans, answer questions, and reinforce the need for applicants to return their SBA loan applications.

The Elderly-Outreach Initiative proved that even a low-tech solution of calling disaster applicants on a one-on-one basis is a viable means of reaching a specialized constituency.

Customer Service Training in Region VII

In 1995 FEMA headquarters initiated a contract with Kaset International to customize a two-day training course for all agency employees and train facilitators and coordinators. Region VII participated in a Facilitator and Coordinator Conference in Tampa, Fl. on September 24-29, 1995.

Customer Service Initiatives in the year 2000

Region VII has formed a Regional Customer Service Committee. With a goal to improve customer service, the region submitted a proposal to create a regional Intranet and Internet site. Each division will develop and maintain its own website. Customers will be surveyed to determine content. The sites will help in meeting our customer expectations and reaching our goals.

Rapid Response

Preparedness, Training and Exercises

Training exercises are a critical part of FEMA's efforts. Exercises are designed to ensure that personnel, plans, procedures, communications, and emergency operations facilities have been tested in simulated conditions to verify that they are working effectively and are ready for emergency activation and implementation.

Radiological Emergency Preparedness

Background

There are five nuclear power plants located in Region VII: Ft. Calhoun Nuclear Station, Blair, Ne.; Cooper Nuclear Station in Brownville, Ne.; Wolf Creek Generating Station in Burlington, Ks.; Callaway Nuclear Power Station in Reform, Mo.; Duane Arnold Energy Center, Palo, Ia. Region VII is also responsible for off-site planning and evaluation for the Quad Cities Nuclear Power Station in Cordova, Il. (The Quad Cities are Bettendorf and Davenport in Iowa and Rock Island and Moline in Illinois.)

All nuclear power plants are required to exercise their plans and procedures every two years.

The most recent exercises for Region VII plants are:

- Callaway Nuclear Power Plant Exercise – September 14, 1999
- Cooper Nuclear Station Exercise - August 26, 1998
- Duane Arnold Energy Center Exercise - October 21, 1998
- Fort Calhoun Nuclear Station Exercise - August 10, 1999
- Wolf Creek Generating Station Nuclear Power Plant Exercise – November 17, 1999
- Quad Cities Nuclear Power Station Exercise – July 12, 2000

In two specific recent instances, Region VII has contributed significant resources and planning skills to the streamlining and continued refinement of the Radiological Emergency Preparedness program:

REP Exercise Evaluation Process

In June 1996 FEMA initiated a Strategic Review of the REP program in order to improve, streamline and enhance its efficiency and effectiveness. The Steering Committee's first recommended initiative was the streamlining of the REP exercise evaluation process. Once the implementation phase of the Strategic Review was underway, FEMA Region VII volunteered to lead the effort to develop the new exercise evaluation process.

Region VII state, local, and private industry partners offered recommendations and suggestions in both written comments and in person at Regional Assistance Committee (RAC) meetings. Two staffers from Region VII states served on the REP Strategic Review Oversight Working Group (OSWG): The state of Iowa has volunteered to serve as one of the pilot tests for the new evaluation process during the October 2000 Duane Arnold Energy Center Exercise.

Standard Exercise Report Format (SERF)

Following each REP exercise, participants must make an evaluation of all activities and procedures. Inconsistency between FEMA regions in the format (i.e. the presentation of basic data and information) in those evaluation reports became an issue of concern. Another problem identified with the reports was the timing; many were issued much later than desirable or useful. There was a need to achieve and maintain uniformity and consistency in interpretation of REP policies and procedures in report preparation, especially concerning issue identification and classification. There was significant variation in the content of the reports, as well, particularly in the documentation of the state and local jurisdictions' performance. There were also significant differences in the format used to document the exercise results and findings.

FEMA Region VII hosted a joint FEMA/State/Utility SERF Workshop in Kansas City, Mo. on February 1-3, 1995 to discuss these concerns. Region VII REP staff presented their modification to the headquarters draft SERF. The Region VII document was accepted as the solution to these expressed concerns.

Operations Support

Awards

Vice President Gore's Hammer Award

September 7, 1995

Region VII's Hazard Mitigation Team (HMT), which was formed following the Midwest floods of 1993, received Vice President Al Gore's Hammer Award in recognition of the innovative, customer-oriented and cost-effective procedures the team developed to implement and coordinate the buyout program.

In his letter of nomination to the Federal Executive Board, Regional Director John A. Miller noted in particular the "Benefits Clearinghouse," a HMT program that identified over \$25 million in duplications of benefits to disaster victims in the first 2,300 Missouri properties acquired. The clearinghouse provided invaluable customer service to its governmental counterparts in benefit review and saved them countless staff hours.

The Hammer Award is a special recognition from Vice President Gore to teams that have made significant contributions in support of the President's National Performance Review principles of "putting customers first, cutting red tape, empowering employees and getting back to basics." It recognizes new standards of excellence achieved by teams helping to reinvent government.

The award consists of a hammer and a small ribbon in an aluminum frame assembled in a sheltered workshop. The note card from the Vice President reads: "For the Hazard Mitigation Team – Thanks for building a government that works better and costs less."

Director's Awards

In 1996, the Director's Meritorious Service Award was presented to six Region VII staff members for "their efforts and contributions toward the improvement of the Federal Emergency Management Agency's ability to work with and provide support to the State and local partners."

In 1997 Tim Seidel received a Director's Meritorious Service Award in recognition of his excellent team effort which led to developing innovative strategies for establishing the Disaster Finance Center.

In 2000, Marlena Cisneros, received a Director's Award in recognition of her efforts to support acquisition requirements.

- In 2000, seven Region VII staff members received Director's Awards for their work in the development, design, and testing of the National Emergency Management Information System (NEMIS).

Other Awards

- Exemplary Practices in Emergency Management Exercises Award