

VII. Emergency Preparedness

1. Overview

In 1995, the Emergency Preparedness Work Group developing the *Strategic Regional Policy Plan for South Florida* concentrated on non-structural hazard mitigation, the vulnerability of health care facilities, shelter and evacuation, and the often conflicting policy environment that contributes to disasters. Other issues, which may be considered of strategic regional importance, such as post-disaster business continuity, structural hazard mitigation of critical facilities, and hazardous materials, were not discussed.

Since then, progress is being made in emergency management with a significant paradigm shift towards structural mitigation of potential hazards before disaster strikes. Funding from the Federal Emergency Management Agency and the State of Florida has been increased to plan for and implement local mitigation strategies (LMS). The LMS for each county includes new analyses of hurricane vulnerability based on the latest data, lists of projects for funding to implement hazard mitigation, and goals and objectives to be achieved to further hazard mitigation.

Indicators of the goals in the SRPP reveal:

- the insured value of property in the Coastal High Hazard Areas is increasing;
- health care facilities now have emergency plans;
- more hospitals are being structurally modified to withstand hurricane winds;
- the number of mobile homes in the region is increasing less rapidly than in the past;
- emergency shelter capacity is increasing;
- local governments are beginning to adopt post-disaster redevelopment plans;
- hazard mitigation is being considered at the local, state, and federal levels; and
- hazardous materials spills are occurring with less frequency than in the past.

U.S. Mainland Hurricane Strikes by Decade, 1900-1999

Source: National Oceanic and Atmospheric Administration, 1997, 1998, 1999, 2000.

DECADE	Category					ALL	Major
	1	2	3	4	5	1,2,3,4,5	3,4,5
1900-1909	5	5	4	2	0	16	6
1910-1919	8	3	5	3	0	19	8
1920-1929	6	4	3	2	0	15	5
1930-1939	4	5	6	1	1	17	8
1940-1949	7	8	7	1	0	23	8
1950-1959	8	1	7	2	0	18	9
1960-1969	4	5	3	2	1	15	6
1970-1979	6	2	4	0	0	12	4
1980-1989	9	1	5	1	0	16	6
1990-1999	3	5	5	1	0	14	6

DECADE	Category					ALL	Major
1900-1999	60	42	52	15	2	165	66

Note: Only the highest category to affect the U.S. has been used.

For one trend, we are probably unable to effect a change. Meteorologists are predicting a return to the cycle of more frequent and more intense storms that existed in the middle of the last century. Unusually active hurricane seasons occurred in 1995, 1996, 1998, and 1999. Over the long term, this has not been borne out statistically. Should this prediction be realized, hazard mitigation is the right direction to pursue. However, in the worst category storms, evacuation and shelter are still of paramount concern and should also be a regional priority. In the meantime, land use policies at the local level are often still at odds with emergency management policies, and shelter capacity deficits persist.

2. Assessment of Emergency Preparedness Goals

Goal:

7.1 Direct future development from the areas most vulnerable to storm surges.

Indicator: Development densities in local comprehensive plans reflect regional policies by the end of the EAR process.

Proxy Indicator: Insured Value of Property in Coastal High Hazard Areas

Time Series Information:

	1995	1996
Broward	79,336,737,256	81,169,643,136
Miami-Dade	81,101,437,269	82,536,268,888
Monroe	4,634,973,768	5,132,477,378
Region	165,073,148,293	168,838,389,402

Source: Apalachee RPC, State of the Coast, p. C.2-2

Analysis

The fact that the insured value of property in coastal high hazard areas (CHHAs) grew by almost four billion dollars in just one year almost speaks for itself. Much of this may be the result of an increase in the value of property over time, as opposed to increases in the number of structures (although that is happening too). This is just the CHHA (which does not include waterfront properties in Coral Gables, Coconut Grove, Brickell Avenue, downtown Miami, Aventura or downtown Fort Lauderdale).

Implications

An increase in property values in the coastal high hazard areas translates to increased potential for expenditures by insurance companies and FEMA for claims. This, in turn is reflected in higher insurance rates and federal taxes. The spatial extent of Coastal High Hazard Areas may be redefined through the LMS process. Look for changes to those boundaries, which will be reflected in these statistics.

Goal:

7.2 No increased risk to hospital patients and special needs population due to an emergency.

Indicator: Percent of licensed health care facilities with emergency plans

Analysis

Legislation was passed by the state in 1994 requiring all in-patient health care facilities and adult congregate living facilities to establish emergency response plans to receive license renewals from the State of Florida. By 1998, all of these facilities had prepared and received approval of emergency response plans, identifying procedures for evacuation, shelter, back-up power generation, staff duties and emergency provisions.

Implications

The cumulative impact of plan implementation will require additional special needs shelter capacity in all three counties. How these facilities perform during an emergency remains to be seen. If successful, this indicator should be retired and the goal evaluated for removal from the SRPP.

Goal:

7.2 No increased risk to hospital patients and special needs population due to an emergency.

Indicator: 25% of vulnerable health care facilities wind-hardened by 2000; 100% by 2015.

Proxy Indicator: Percent of hospital facilities wind-hardened.

Time Series Information:

	1990	1999	2000
Broward	0	32	32
Miami-Dade	0	10	13
Monroe	0	100	100
Region	0	24	25

Sources: Broward County Emergency Management, Miami-Dade County Emergency Management, Monroe County Emergency Management.

Analysis

The recognition by hospital boards that critical care patients may not require evacuation with adequate structural mitigation to their facilities appears to be manifested by this indicator. Expect this trend to continue upwards in the coming decade. Information from Monroe County Emergency Management reveals that all three hospitals in the county are now wind-hardened.

Implications

Many of the region's hospitals are located in hurricane evacuation areas. These hospitals face a dilemma when it comes to evacuations. If they evacuate critically ill patients and an injury occurs, they face liability. If they choose not to evacuate patients and injuries occur, they face liability too. Structural mitigation of hospital facilities reduces the risk to patients in lower category hurricanes without necessitating evacuation during a stressful and dangerous period.

Goal:

- 7.3 Encourage all levels of government and the private sector to work together to ensure adequate and timely shelter within the region for those residing in the hurricane evacuation areas.

Indicator: Regional shelter capacity for 25% of the vulnerable population by 2000; 100% by 2015.

Proxy Indicator: Mobile Homes Occupied Year Round

Time Series Information:

	1980	1990	1995
Broward	17,818	19,992	20,881
Miami-Dade	12,541	15,359	15,379
Monroe	4,192	6,791	6,562
Region	34,551	42,142	42,822

Source: 1980, 1990 U.S. Bureau of the Census; 1995 State of Florida Department of Health and Rehabilitative Services.

Analysis

The number of mobile homes occupied year-round in the region increased between 1980 and 1990 at an annual rate of 2%. This growth continued unabated in Broward County by 1995, but halted in Miami-Dade County and declined in Monroe County. The reduction in growth of mobile homes occupied year-round in Miami-Dade is probably the result of Hurricane Andrew, which destroyed many mobile homes in August 1992, three years before this count was taken. It is interesting to note that in such a short time, all of this inventory was replaced, if not necessarily at the same sites (recent aerial photos still show significant numbers of empty mobile home spaces in south Miami-Dade). The decrease in Monroe County is puzzling. The difference could be between the two sources. Decennial figures are from the Census, while 1995 figures are mobile homes registered with the State of Florida. It will be interesting to see what impact Hurricane Georges will have on the 2000 figure.

Implications

An increase of the population in mobile homes has varied implications for emergency management. Mobile homes are inherently unstable in high winds, are more prone to damage and destruction than homes on foundations, and tend to be occupied by those least able to afford other home types. As a result, mobile home occupants are expected to evacuate in a category 1 hurricane, increasing the demand for shelter capacity. Mobile home occupants are more likely to require long-term sheltering during the recovery period, requiring additional local, state and federal resources. Mobile home occupants are more likely to become destitute or homeless as a result of the emergency, due to the loss of material possessions and the higher cost of housing alternatives. This increases the cost to government for social services. In category 1-3 storms, mobile homes are more likely to generate debris in high winds, causing collateral damage to other nearby structures and their occupants, and increasing the cost to government of debris clearance and disposal.

Goal:

7.3 Encourage all levels of government and the private sector to work together to ensure adequate and timely shelter within the region for those residing in the hurricane evacuation areas.

Indicator: Regional shelter capacity for 25% of vulnerable regional population by 2000; 100% by 2015.

Proxy Indicator: Number of public emergency shelter spaces

Time Series Information:

	1995	1999
Broward	64,775	68,200
Miami-Dade	49,311	56,145
Monroe	10,524	7,395
Region	124,610	131,740

Sources: SFRPC, South Florida Regional Hurricane Evacuation Study, 1996; Broward County Emergency Management, Miami-Dade County Emergency Management.

Analysis

With the exception of Monroe County, shelter capacity in the region appears to be increasing. Monroe County's out-of-county shelter at Florida International University has been structurally reassessed and explains the decrease in shelter space available to the county. Broward County Public Schools has adopted a policy that new schools are designed to serve as hurricane shelters. As a result, as each new school is built, shelter capacity should increase. However, some older facilities that do not meet the structural requirements of the American Red Cross have been removed from the list. Miami-Dade County Public Schools are beginning to comply with a similar policy, so this trend of greater shelter capacity should continue. Year 2000 Census figures should tell us how well the supply is keeping up with the demand.

Implications

The American Red Cross recommends that the public shelter supply equal or exceed 25% of the vulnerable population. When the SRPP was written in 1994, this resulted in a deficit of 142,870 spaces in a Category 5 storm. For those who may seek public shelter and not find it, additional automobiles are attempting to flee the region, exacerbating an already serious regional evacuation clearance time through Palm Beach County.

Goal:

7.4 Achieve consistency between goals and objectives of agency plans and emergency plans.

Indicator: Emergency preparedness consistency in state statutes by 2000.

Analysis

Significant progress has been made on a number of policies under this goal through the Local Mitigation Strategy (LMS) process. 7.4.3 Encourage the state legislature to: c) revise the existing formula for distribution of emergency planning in the Evaluation and Appraisal Report process to reflect the needs of more populous counties; This has been accomplished, not through the EAR process, but by the LMS process by which planning funds were distributed roughly according to each jurisdiction's population, and by acceptance of the LMS process as the means for developing PDR plans required by the EAR process. 7.4.3 d) amend chapters 163 and 252, F.S., to include hazard mitigation with post-disaster redevelopment planning in a concerted strategic manner. Without having amended the statutes, the LMS process affords local governments an opportunity to participate in hazard mitigation and PDR planning in a concerted strategic manner. 7.4.5 Local governments should clarify and redefine hurricane preparedness issues and policies, such as the extent of storm surge areas, updated ground elevations, the coastal high hazard area, the hurricane evacuation areas and shelter capacities in their local government comprehensive plans as new information is available. The LMS process includes updated vulnerability analyses, which should address these issues by utilizing more advanced modeling techniques and current information. The results of these analyses should be reflected in the PDR plans adopted by local governments.

Implications

Other policies under this goal remain to be implemented. More progress should be made by the year 2000 time frame. The other indicator for this goal, Standing regional emergency planning committee established by 2000 has a draft work plan and awaits funding.

Goal:

7.5 Minimize future risk to lives and property partly through the timely completion of post-disaster redevelopment plans.

Indicator: Reduction in the number of repetitive loss properties.

Proxy Indicator: Local governments with adopted post-disaster redevelopment plans

Time Series Information:

	1990	1998	1999
Broward	0	0	0
Miami-Dade	0	2	3
Monroe	0	0	0
Region	0	2	3

Source: Department of Community Affairs

Analysis

Rule 9J-5 requires coastal communities to include post-disaster redevelopment (PDR) plans within their coastal elements. However, this has not been enforced consistently. The Department of Community Affairs (DCA) has been finding coastal communities not in compliance that have not adopted a PDR plan by the end of the Evaluation and Appraisal Report process. Others have made arrangements to adopt PDR plans at the end of the Local Mitigation Strategy (LMS) process. In 1998, Bal Harbour Village and North Miami Beach adopted PDR plans. So far in 1999, Aventura has adopted a PDR plan and North Bay Village has agreed to as part of a stipulated settlement agreement. Broward and Miami-Dade Counties are expected to adopt PDR plans six months after the completion of the LMS process. The DCA is expecting coastal municipalities within those counties to adopt PDR plans in 2000 consistent with the county plans. Local governments without a coastline are not required to have a coastal element or a PDR plan.

Implications

Most local governments have formal mechanisms to function in the preparedness and response phases of emergency management. Very few have a strategic plan for decision-making in a post-disaster scenario. Such a plan defines reasonable expectations about the recovery schedule, fosters consistent decision-making, establishes priorities for recovery, and provides for hazard mitigation to reduce losses in the next emergency. Failure to plan for this phase can prolong physical, economic and psychological recovery for the region and its residents.

Goal:

- 7.6 Achieve flexible and comprehensive emergency planning for a variety of emergencies

Indicator: List of basic necessities to sustain life and their suppliers identified and agreed to by 2000.

Proxy Indicator: Reported Hazardous Materials Spills

Time Series Information:

	1994	1995	1996	1997
Broward	99	110	122	77
Miami-Dade	45	24	51	32
Monroe	102	116	82	63
Region	246	250	255	172

Source: Apalachee RPC, *State of the Coast*, p. C.2-6.

Analysis

As an indicator, this needs more understanding. Is this sudden drop due to underreporting, a decline in industry of hazardous materials use, or are we really getting better at preventing spills. In the light of the previous three years, can this even be called a trend? On the whole, the numbers are encouraging.

Implications

Hazardous materials spills are a threat to the environment as well as human health. This could be an indicator for goal 3.2 as well as 7.6. If the latest trend continues, these risks are reduced, which include: groundwater contamination, short and long term chemical reactions, clean-up costs, loss of native animals, evacuation, possible buy-out of homes, loss of eco-tourism.