

*The Link Between Hazard Mitigation and Livability*

# Planning for a Sustainable Future



# A Message From the Director of the Federal Emergency Management Agency

Floods, earthquakes, hurricanes, wildfires, tornadoes, and technological disasters cause billions of dollars of damage annually throughout the United States. The loss of lives, injuries, and damages to homes, businesses, or workplaces cause incalculable hardship and emotional suffering, and tear at the very fabric of our lives and our communities.

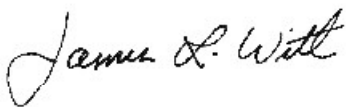
While we will never be able to completely prevent disasters from occurring, we do know how to reduce their impacts. Hazard mitigation is the most proactive and successful method for reducing the physical, financial, and emotional losses caused by disasters. Hazard mitigation means actions that reduce or eliminate the long-term risk to people and property from the effects of hazards. Hazard mitigation reduces future disaster losses through land use planning, site design, engineering, and retrofitting of homes, structures, schools, public buildings, and businesses.

FEMA, through its *Project Impact: Building Disaster Resistant Communities* initiative, is helping communities across the nation change the way they think about disasters. The challenge of making communities disaster-resistant makes us think about where we live, and how our communities grow. We can make our communities better places to live by protecting their natural, cultural and historical heritage, making them more attractive to business, and better managing sprawl.

This booklet, *Planning for a Sustainable Future: The Link Between Hazard Mitigation and Livability*, is about hazard mitigation, disaster resistance, sustainable development and livability, and describes the linkages among these concepts. It shows how communities that undertake hazard mitigation planning become more disaster resistant, which can reap further benefits. Hazard

mitigation links disaster resistance to broad community objectives of economic health, social well-being, and environmental protection.

The awareness, energy and resources that communities bring to the task of becoming disaster resistant can serve as a catalyst for important discussion and debate about actions that contribute to the broader objectives of livability and sustainability. We hope that this booklet will motivate your community, be it a small town, growing suburb, or large city, and be a valuable resource to you in encouraging and supporting a dialogue between disaster resistance and livability. FEMA looks forward eagerly to working with the American public and our partners in business, State, and local government; the planning, engineering and design professions; emergency management; academia; and the non-profit sector, to create, throughout our nation, communities that are safer, stronger, and more livable.

A handwritten signature in black ink that reads "James L. Witt". The signature is written in a cursive style with a large initial "J".

James Lee Witt  
Director  
Federal Emergency Management Agency

# Message from the Associate Director for Mitigation

Think of a community struck by disaster – be it a tornado, flood, hurricane, earthquake, explosion or other event. Recall the scenes of destruction and devastation that have become all too common on the nightly television news. Now imagine a recovered community that is ultimately safer, stronger, and more sustainable than it was before the disaster.

Or consider a community that is fortunate enough to recognize its vulnerability before a disaster occurs, and has the foresight to plan ahead and take action to reduce hazards and suffering.

Both of these communities, and thousands of others like them across our nation, can use their vulnerability to disasters as a catalyst for positive, creative change. This booklet, *Planning for a Sustainable Future: The Link Between Hazard Mitigation and Livability*, is designed to show you how you can make this happen in your community. You can link the goal of increasing resistance to disasters to other broad goals, such as enhancing community environmental, economic and social health. This linkage, or integration, of the plans and actions that contribute to achieving these goals is critical to the livability and sustainability of your community.

Sustainable development links policies related to economic development, environmental health, resource protection, and social well-being. Through the efforts of many people and organizations, including the President's Council on Sustainable Development and the White House Task Force on Livable Communities, public awareness of sustainable development has been increasing rapidly. Communities throughout our country (and abroad) have begun to plan for and implement sustainable approaches to growth and development.

Until recently, sustainable development has tended to focus on environmental protection and energy savings, with less emphasis on other planning concerns such as disaster resistance. However, a community that is not disaster-resistant cannot be sustainable. FEMA, through its *Project Impact: Building Disaster Resistant Communities* initiative, is trying to change the way America thinks about disasters. It encourages communities to engage local stakeholders on the issues of hazard risk and vulnerability, and gain consensus and support to implement mitigation measures to reduce losses from future disasters. Through public awareness and education, the American public will want – in fact, demand – disaster-resistant communities. The information and examples in this booklet will point the way.

Although a disaster is something that no community ever wants to experience, it can be an opportunity to re-think where we live, play and work; and to rebuild safer, stronger, and more sustainably. This booklet explains how communities can make the concepts of hazard mitigation and sustainable development part of their recovery, and break the cycle of disaster-rebuild-disaster.

I sincerely hope that *Planning for a Sustainable Future: The Link Between Hazard Mitigation and Livability* will motivate you to take action in your community. You will learn, from the examples of other communities, how hazard mitigation, environmental protection, economic prosperity, and social well-being can be woven together to help your community become a safer, stronger, and more sustainable place in which to live.

A handwritten signature in black ink, reading "Michael J. Armstrong". The signature is written in a cursive style and is positioned to the left of a vertical line.

Michael J. Armstrong  
Associate Director for Mitigation  
Federal Emergency Management Agency

This booklet, *Planning for a Sustainable Future: The Link Between Hazard Mitigation and Livability*, is the first of two publications FEMA is preparing to highlight and promote the vital connection between disaster resistance and livability. It focuses on a vision of sustainable communities and shows communities how disaster prevention planning before a disaster strikes and/or a planned recovery process after a disaster can serve as a catalyst for creating more sustainable communities throughout the nation.

*Rebuilding for a More Sustainable Future*, the second publication, will take the themes covered in *Planning for a Sustainable Future: The Link Between Hazard Mitigation and Livability* and develop them into more detailed practical guidance for use during the post-disaster recovery process. This guidebook is intended to be used by FEMA staff and State agencies that will be working directly with communities after a disaster. It is also intended to assist local officials and citizens of affected communities to understand how the decisions they make and the actions they take as part of their recovery can ultimately result in a more sustainable community. *Rebuilding for a More Sustainable Future* will be available in late 2000.

# Introduction

The rising cost of natural disasters over the past decade has led to a renewed interest in identifying effective ways to reduce our nation's vulnerability to disasters. Since 1993, FEMA has spent more than \$20 billion in over 5,000 counties on disaster recovery. Growing costs are due in large part to the fact that more development stands in harm's way than ever before. Demographic and large-scale migration trends over the last 30 years have placed an increasing percentage of our population at risk to natural disasters. In 1970, 31 percent of Americans lived in areas subject to hurricane winds, 19 percent faced severe earthquake risk, and 22 percent lived

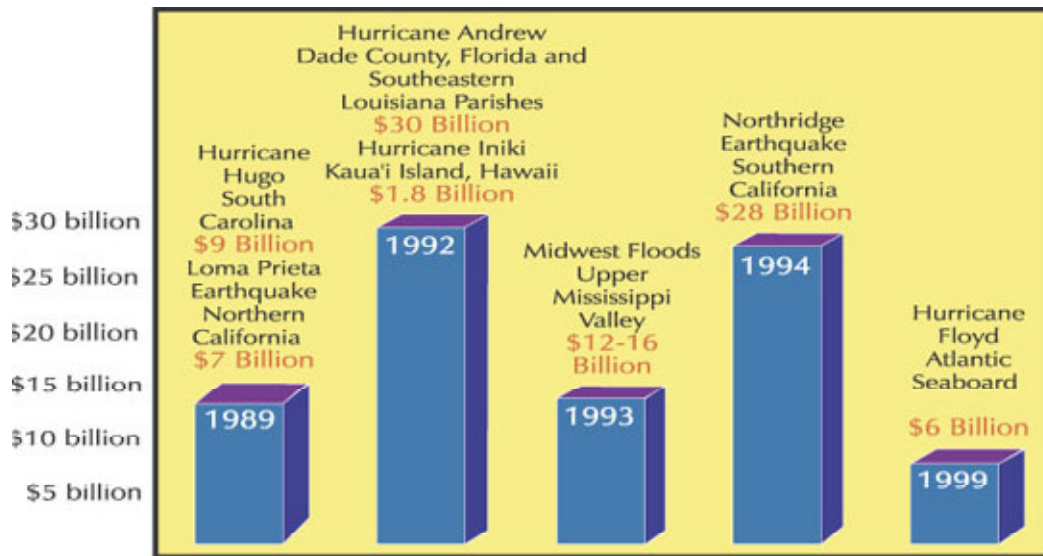
in counties with high landslide risk. By 1990, more than 50 percent of all Americans lived in coastal regions and populations at risk to earthquakes and landslides had increased dramatically as well. In Florida alone, over 80 percent of the State's population lives within 10 miles of the coast. In fact, many of the fastest growing counties in the nation are located in areas of risk along the Atlantic and Gulf coasts.

Unsustainable development is the root cause underlying the mounting cost of natural disasters. Land development patterns over the past several decades have emphasized sprawling suburban communities and homes constructed with little or no attention paid to protection against high winds, flooding, wildfire, or other natural

*Throughout history, communities have been planned to meet a threat. Some were garrisoned to ward off invaders. Others were built along waterways to ensure the availability of natural resources. Today, by planning communities to address the oldest of threats—natural disasters—we can also plan to embrace the newest of opportunities. We can make them more attractive to business better manage sprawl and protect their natural heritage.*

James L. Witt,  
Director of FEMA

## Recovery and Reconstruction Costs of Major Natural Disasters







### Arkadelphia, Arkansas

Since a devastating tornado struck in March 1997, zoning regulation changes have guided reconstruction efforts. These changes have resulted in a greater diversity of housing types and compact reconstruction efforts in an older residential neighborhood and the downtown business district. Energy-efficient single-family detached homes and attractive multi-family, low-income townhouse projects have replaced older, single-family homes that were destroyed. The city took advantage of the disaster recovery opportunity to develop a multi-objective recovery plan that will make Arkadelphia more sustainable than it was before the tornado struck.

hazards. Building is often permitted in high hazard areas because it satisfies an economic need or a locational preference. Yet, much of this development is not sustainable in the long run.

Taxpayers spend billions of dollars each year to help others recover from disasters, but recovery costs are not borne equally. We allow some people to build in environmentally sensitive areas susceptible to natural hazards, and then we pay to help them recover when disaster strikes. This is not sound environmental or fiscal policy. In many cases, decisions about where to locate development are made because they appear to save money in the short-term. Ultimately, these decisions cost more because the vulnerability of these sites has never been fully examined.

Achieving livable communities that provide disaster-resistant housing, employment, transportation, and public services means taking a closer look at what it means to be sustainable. An essential, yet often overlooked, characteristic of sustainable communities is their ability to reduce their vulnerability to disasters. This booklet discusses how your community can begin or continue the process of achieving sustainability through pre-disaster planning and post-disaster recovery.