

GUEST SPEAKERS
FEMA Success Stories Project Impact

Ms. Maria Vorel, Director, Outreach and Community Support Division, FEMA

Remarks. Project Impact brings risk assessment to a "by the people, for the people" mind-set. Project Impact communities are adding a practical application to risk assessment which in turn is putting pressure on all of us to work together, not only in policy development, but also in developing practical job aides for non-technical community based applications. We at FEMA have been funding the States for decades to conduct hazard identification, vulnerability analysis and risk assessment, but I have not seen risk assessment serve as the backbone of community planning and project prioritization, until Project Impact came along.

Let me tell you a little about what Project Impact is all about. Project Impact is a way to give communities responsibility and ownership for long-term natural hazards risk reduction activities. It allows FEMA a focused delivery mechanism to provide holistic technical assistance to an enthusiastic audience. Project Impact creates public value and demand for sound land use and growth strategies. And although it was designed and implemented to benefit communities, the benefits for FEMA, and potentially all of us, are profound. We began in 1997 with seven pilot communities. Currently we have 250 areas designated Project Impact communities, which represent about 800 jurisdictions.

As a result of FEMA's role in Project Impact, we have learned valuable lessons about risk assessment at the community level. For many of our communities, risk assessment is an elephant to be eaten one bite at a time. As such, partners are needed to help build capacity. But risk assessment plays different roles depending on the community. Generally, it is not a linear process and we do not often see a scientific, highly technical process at the onset.

Two examples I want to share with you highlight the importance of public education and consensus building for using risk assessment in the community setting. Once the community agrees on what the problem is, and where they are most vulnerable, risk assessment can be used to prioritize mitigation projects, to make decisions with respect to economic development and to decide where to leave open space.

Pascagoula, Mississippi, held a Hurricane Awareness Day. There were over 30 exhibits and other awareness activities, including the FEMA Project Impact and Hurricane Awareness displays. One of the top billings was a risk assessment hot air balloon ride over the city, which was an educational ride showing the flood plains and surge prone areas of the city. The success of this exposure was dramatic. By providing an aerial vantage point, citizens could see the interface of development and vulnerable areas and could better understand the need to protect these important, protective land barriers.

We encourage communities to convene large groups of local partners to build support for the nature of the problems to be faced by the community. If mitigation planning is new to the community, sometimes an oral history of disasters in the area is an important educational part of the gathering.

Johnson County, Kansas, held a consensus-building meeting focusing on risk assessment with 40 key local officials and FEMA staff. A representative from the National Weather Service and a local meteorologist also participated. The local FOX station interviewed Thomas Dow,

from the Kansas State Department of Commerce and a representative from FEMA Region VII for the evening news.

I don't want you to leave here thinking that Project Impact communities are all at a rudimentary level of risk assessment. Some are extremely sophisticated and are setting the standards of how to integrate risk analysis into everyday local decision-making and long-term planning. Peer mentoring is also invaluable to us in growing capacity across the board and across the country.

FEMA places a premium on the use of HAZUS and GIS (Geographic Information System) technologies as tools for risk assessment. Hazards US or HAZUS, FEMA's earthquake loss estimation methodology, has been provided to each Project Impact community along with special outreach and training opportunities designed specifically for communities.

FEMA has also created a GIS partnership with the Environmental Sciences Research Institute, Inc (ESRI) and hosts a link from FEMA's website to the ESRI "Know Your Risk" website, which provides hazards information at community level. In 1999 and 2000, ESRI provided free GIS software to every Project Impact community and began sponsoring the Project Impact ESRI Challenge Grant. Recipients are chosen based on the merit of their proposal for developing GIS applications for hazard management. Challenge grants have been awarded to 17 communities in the last 2 years, on the condition that they make templates of their GIS projects available to everyone.

We have also learned that the process of becoming disaster resistant doesn't happen overnight. Tucker and Randolph Counties, West Virginia, stretch for more than 75 miles along the northern fringe of the Allegheny Mountains in eastern West Virginia. With a combined population in 1990 of just over 35,000, the region is predominantly rural, with most settlements restricted to narrow river valleys. The primary concern in this area is flooding. Tucker and Randolph Counties have received presidential disaster declarations as a consequence of flooding five times since 1967. In 1996, several events resulted in a total of \$65 million in disaster aid to the communities.

The two counties were jointly named as a pilot Project Impact community in 1997. At the time, there was no clear idea of what to do to become disaster resistant. And while there was no political cohesion, citizen groups and a group of elderly widows knew they needed to change the way they were running their community. In the spring of 1998, the "Spring Break" student community activity for the area was to train college students to use GPS (Global Positioning System) and plot the elevations of homes in some highly vulnerable areas. In July 1999, Tucker-Randolph Counties Partnership hired Woolpert and Associates, LLC to prepare a Risk Assessment study for their community. Also in 1999, the ESRI donated almost \$5,000 worth of GIS software and training to the partnership to assist in developing a comprehensive disaster resistant planning tool¹. In June 2000, the joint county partnership received documentation and GIS discs from Woolpert and Associates comprising the final risk assessment. Over 1,200 structures, that were identified as "at-risk" structures, are being prioritized for mitigation. Once prioritized, the structures will be ranked and funding for the mitigation implementation will be sought. Additional funding to expand the risk assessment has been requested from the Region VII Development Council². At the 2000 Project Impact Summit, Tucker-Randolph was named as one of 13 Project Impact ESRI Challenge Grant recipients. The Tucker-Randolph Steering

¹ Information provided by community as reported in Community Highlights dated July 12, 1999 and stated in the Community Overview.

² Information taken from Tucker-Randolph Annual Progress Report dated June 14, 2000.

Committee also decided to add activities to develop their application to the Community Rating System program. They plan to work with the individual municipalities and county commissions to reduce flood insurance premium rates.

To give you another example, the NOAA Coastal Services Center developed a computer-based Risk Assessment Tutorial, for Wilmington, North Carolina, which is now provided to all of our communities as part of our Project Impact Community Tool Kit. Additionally, many of our communities in the Pacific Northwest have been greatly assisted by USGS in their risk assessment efforts.

Finally, we have learned that to be effective Project Impact should not be perceived solely as a function of emergency management. It is more appropriately a consensus based on publicly held value of the community at large, employing a community development implementing process. In observing successful Project Impact communities, features of commonality emerge. While the format, structure and implementation reflect the culture of each community, the following are what appear to be operational components for successful Project Impact communities:

- Strong Local leadership that involves local elected officials and integrates mitigation into institutions of local government;
- A coordinating mechanism including public/private consensus decision making;
- Partnership development that includes all sectors of the community;
- Multi-hazard identification and risk assessment, including adopting a risk reduction plan;
- A public education strategy, plan, and implementation;
- Implementation of projects to reduce risk;
- Strategies for sustaining community participation in disaster resistance;
- Evaluation of goals, strategies, and implementation; and
- Mentoring and networking with other Project Impact communities.

Let me take advantage of this opportunity to ask you to consider how your agency can support our communities. If you have a grant that can be used for hazard identification, risk assessment, or GIS, consider a Project Impact community, where you will get good return on your investment. The benefits to the Federal Government are not only a sound performance outcome, but also useful feedback. Project Impact communities are great places for field-testing and for getting valuable feedback. If this has any interest to you, please get in touch and we would be happy to get the word out to our communities.

FEMA Success Stories: Disaster Resistant Universities

Mr. Brian Cowan, Director, Office of Strategic Initiatives, FEMA

Synopsis: Mr. Cowan discussed the initiative to build Disaster Resistant Universities. He covered an excellent example of a university that has advanced and enhanced its risk management activities under this program. The University of California, Berkeley, has assessed campus structural and (more importantly from a business continuity perspective) non-structural vulnerability to seismic disasters, and made substantial progress in planning for and implementing upgrades to reduce these risks. Universities, and those with vested interest in them, must be concerned about how they prepare for and recover from disasters in a manner that minimizes the effects of the disaster on their business activities. Universities, for example, have over \$15 billion in annual Federal funding for research.

Website: www.CED.Berkeley

The Role of Insurance in Hazard Resistant Communities

Dr. Paul R. Kleindorfer, Co-Director, Wharton Risk Management and Decision Processes Center, University of Pennsylvania

Synopsis: Dr. Kleindorfer described the role of insurance in promoting mitigation and encouraging the development of hazard resistant communities. His presentation built on the results of a multi-year project at the Wharton School on financing and mitigation of catastrophic risks, including the key role that insurance plays in this regard. He traced the important trends that have occurred in recent years in insurance markets for catastrophic risks, including the development of better scientific tools for risk quantification and their increasing use by insurers and reinsurers in assessing the portfolios of risk they insure.

Remarks: While insurance can play an important role in signaling the cost of risk from decisions like location, mitigation and structural features of homes and businesses, there are also very important reasons for insurance to be understood as only one ingredient of the public-private partnership necessary to cope with natural hazards. These include reducing the magnitude and uncertainty in these risks through individual and community level mitigation initiatives. In particular, the problems faced by the insurance industry in insuring natural hazard risks will be exacerbated if surge, flooding and coastal erosion damages from climate change should continue or become even more pronounced in the years ahead. A fundamental driver of concern in the insurance industry in the U.S. has been the significant increase in the risks of natural disasters in recent years, straining private insurance markets and creating troublesome problems for disaster-prone areas.

The threat of mega-catastrophes resulting from intense hurricanes or earthquakes striking major population centers has dramatically altered the insurance environment. Estimates of probable maximum losses to insurers from a mega-catastrophe range from \$50-\$115 billion, depending on the location and intensity of the event. Under current conditions, many insurers could become insolvent or financially impaired if a mega-catastrophe occurred, with rippling effects throughout insurance markets and the economy. Increased catastrophe risk poses difficult

challenges for insurers, reinsurers, property owners, and public officials.

The fundamental dilemma concerns insurers' ability to finance low-probability, high-consequence (LPHC) events. LPHC events generate a host of interrelated issues with respect to how the risk of such events are managed, financed, and priced. Insurers have sought to raise their prices and decrease their exposure to catastrophe losses, while looking for efficient ways to diversify their exposure through reinsurance and securitization.

Research at the Wharton school focuses on the effects of these various strategies on actual coverage offered and prices charged in the Florida market. This research represents the first significant attempt to examine the nature of the natural disaster insurance market at a detailed, micro-economic level. Such an examination is made possible by the unprecedented assembly of an extensive, detailed database on residential insurance transactions affected by catastrophe risk. These data are supplemented by information on insurer financial and organizational characteristics and the demographics of residential households at a zip code level. This contributes to previous research by exploring several significant aspects of residential insurance markets in areas threatened by natural disasters.

An initial analysis identifies the key determinants of the demand for residential/catastrophe insurance and their effects on the quantity, quality, and price of insurance purchased. Among the factors are the sensitivity of demand and supply to prices, policy features, and the bundling/unbundling of perils and coverages. In particular, the insurers are sensitive in their pricing to key aspects of location and mitigation, both at the level of individual structures and at the level of the community. This has obvious and important implications for the interaction of initiatives to promote hazard resistant communities through a partnership with the insurance industry and the risk science that underlies it.

Website: www.grace.wharton.upenn.edu/risk/

