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RURAL COMMUNITIES: SPECIAL NEEDS OFTEN OVERLOOKED



For most of us the term “rural” depicts a small, agriculturally based community out in the middle of nowhere. While it is true that remoteness is the one characteristic that all true rural areas share in common, the reality of agriculturally based rural communities is not. In fact, the number of agriculturally based communities that have an economic dependence on farming is now fewer than one-fifth of rural counties in North America (Deavers, 1992).

Rural America today is a striking picture of diversity and far from the agrarian monotype that most of us imagine. Today’s rural communities are emerging with a much broader economic base that includes areas such as manufacturing, recreation and tourism.

The most important question to be asked is “does more attention need to be given to the sustainability of rural communities to disasters?” This issue of the Journal is dedicated to addressing this question as it relates to the effects that a damaging

earthquake would have on rural communities in the central US.

While rural areas confront many of the same problems as other jurisdictions, they also face some that are unique. In addition, resources available to address those problems are often quite limited. Rural areas are asked to bear the burden as stewards of the environment, providers of food and fuel, and to attend to their own duties of health care, education, recreation, tourism, and economic development. While the total resource base of the world’s rural inhabitants continues to shrink, the need for new resources to sustain metropolitan inhabitants continues to expand at an alarming rate.

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Rural communities face special challenges that arise from a number of factors, including:

- The nature of the rural economy
- The relative isolation of rural areas
- The lack of public transportation
- The lack of readily accessible support services

A recent publication from the Rural Community Consortium, "Where the Rubber Meets the Road: New Governance Issues in America's Rural Communities," also describes many of the critical challenges to rural areas, including inadequate administrative structures and human and fiscal resources; the lack of clarity in the responsibilities of local governments; inadequate expertise in long-range planning and fiscal management; and differing levels of willingness to gain broad-based participation in community decision-making. As a result, state and federal resources should focus more attention on technical assistance efforts that will enhance the capacity of local governments and community organizations to withstand and recover from an earthquake or other disasters. The lack of resources and economic base means that in a large number of rural communities, the city and county personnel, including the elected officials, are part time employees. The

"A lack of basic resources to meet the community's needs is repeatedly shown as a major factor in a community's inability to quickly recover from a large-scale disaster."

community planning efforts are often handled by a regional planning district, which means that the community does not always understand the procedure that is being carried out on their behalf. Metropolitan communities, in addition to having dedicated planners, often have agencies dedicated to the redevelopment issues of the community. These redevelopment agencies have developed



long-range plans for how the city will reinvent itself. These plans serve as valuable resources that can be utilized following a disaster, so that the community does not lose time in determining their best course of action. A rural community facing a similar disaster will have to make a lot of decisions without the aid of such a plan. Decisions made in such a manner have a greater chance of failure.

CUSEC's efforts to bring the earthquake program to communities as part of an all-hazard approach to helping them become more disaster resistant and achieve a level of sustainability has been a tremendous help. We have seen these communities go on to become successful participants in FEMA's Project Impact initiative. The added attention that is given to rural communities has a much more dramatic effect than is typically seen in metropolitan communities, (see article on page 5). The capacity of individual communities to bring about a better future for themselves depends in no small measure on how well they are equipped in terms of leadership and team related skills, something that Project Impact and related programs have been shown to provide.

Increasing the Capacity of Local Government and Community Organizations.

Dollars that moved from the federal and state levels down to rural communities such as the Project Impact community of Clay County, Arkansas, have begun to assume greater responsibility for the implementation of state and federal programs, including mandated reporting, program design, and assessment and evaluation. Greater emphasis needs to be placed on creating programs that are sensitive to the needs of rural areas and the involvement of community residents in planning to meet their needs. It is important for the community itself to become involved in the project. A sustainable community needs to be developed by the people who make up the community. It cannot be designed by a consultant, nor can it be implemented by experts hired specifically for the project. It needs to be implemented every day by the people who live and work in the community.

Many in the emergency management profession would argue that planning efforts have to concentrate on the metropolitan areas, due to the larger

population at risk. While true that cities like Memphis and St. Louis have a concentrated population base that is vulnerable to the effects of a damaging earthquake. These communities also have a greater ability to absorb the effects of a disaster. The economic base, the diversity and size of the businesses and industry that reside within the boundaries are far more resilient and able to rebound with little long term effect.

Larger communities also have a higher percentage of new growth resulting in the demolition of older buildings and the continual development of newer, more code compliant structures. The economic boom that larger communities are feeling has had less of an impact on rural communities. These communities are, more often than not, having to make do with buildings and infrastructure that dates back to the 1800's. What's viewed by many larger metropolitan communities as quaint, historical, or even an illusion of times past can afford to utilize these as secondary types of structures. Rural communities may see some of the same aspects, but the functionality of the structure is out of necessity. These types of buildings, usually unreinforced masonry, (URM) also make up a smaller percentage of their building stock for larger communities as compared to the very large percentage in rural communities. The vulnerability of these older buildings to the effects of earthquakes increases the potential for higher losses and lessens the recoverability of the community.

The thin line that separates sustainability from failure by rural communities was demonstrated on July 1st 1997, when a rock slide on I-40 closed a section of interstate along the eastern edge of the Great Smoky Mountains National Park near Newport, TN. This area of interstate is a key link between Tennessee and North Carolina for both vacationers traveling to the park and

“Annette Mason, manager of the Holiday Inn in Newport, TN sat helplessly watching her business plummet during what is normally the heaviest tourist season of the year.”

commercial carriers. Businesses along the various interchanges that rely on the traffic were hit hard financially. Despite round the clock operations to clear the interstate for the upcoming Fourth of July weekend, the interstate remained closed for over four months due to continued slides and repair delays (For additional information on the impact see page 13).

Rural towns which border interstates often have a concentration of service sector

business along the interstate interchanges. They are almost totally reliant on the traffic that passes through for their financial well being. In the central US, Interstate 55, which runs north and south from Louisiana to Illinois, is dotted with these sorts of businesses. An earthquake in the central US is expected to heavily impact the transportation infrastructure, and the effects on these centralized businesses will be tremendous.

A similar scenario was played out in 1983 with the Coalinga, California earthquake in which the town of Coalinga, with a population at the time of about 7,000, was devastated by an earthquake. The 6.7 magnitude event decimated the

Capacity-building and coalition-building toward sustainable hazard mitigation planning in rural communities

Related outreach activities: (i) Member of Town of Dryden (Tompkins County, New York) Project Impact Steering Committee; (ii) collaboration with the Tompkins County Chapter of the American Red Cross on projects related to hazards mapping and community disaster education; and (iii) collaboration with the New York State Emergency Management Office's (SEMO's) Hazard Awareness and Risk Reduction Program Hazard Assessment and Mapping on hazard assessment and mapping for Cattaraugus, Cortland, Erie, Genesee, Jefferson, Monroe, and Oswego counties.

Research related to appropriate hazard assessment methodologies for "resource-constrained" communities:

The research is predicated on concerns that the contribution of local rural communities to overall sustainable hazard mitigation planning efforts is largely ignored in ongoing hazard assessment research efforts. This is particularly evident in current data collection, modeling and assessment activities that have national, regional and urban foci. Second, hazard assessments are not framed at scales of analysis that reflect a holistic integrative watershed approach to sustainable hazard mitigation planning. This approach should entail multiple hazards, multiple scales of representation and viewing, and multifaceted problem solving (viz. mitigation, recovery, response, land use planning, watershed management, environmental protection, natural resource management, economic development, community empowerment, outreach and education).

Building on FEMA's Project Impact "partnership" concept:

This research examines (i) the extent to which Project Impact partners and watershed coalitions share mutually beneficial interests and (ii) the extent to which Project Impact helps foster a coordinated, multifaceted, multi-hazard and multi-disciplinary approach to disaster resilience and local sustainability. The research focuses on New York State's current FEMA-designated Project Impact communities which represent a wide range of community traits (e.g. socioeconomic conditions, types of hazards, and institutional factors) from which to draw meaningful recommendations and transferability to communities nationwide.

To learn more about these efforts contact:

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community. Within the central business district 95% of the retail space was destroyed, 13% of the housing stock was totally destroyed, 26% was heavily damaged and an additional 33% suffered some damage. At the time it was unclear whether or not the community could

“Rural communities are the backbone of this nation. They serve as a reminder of our heritage and their physical and social place and the dynamics that surround them are unique unto themselves.”

afford to rebuild based on the federal disaster loans available and their ability to generate enough revenues, both public and private, to qualify. To compound problems, the chief employer for the community was the oil and gas industry and it seemed unlikely that they were willing to make any long term investments in the area.

The community’s limited resources caused legislation to be introduced at the state level to support the long-term planning and reconstruction. State officials did not feel that Coalinga could afford the necessary ongoing planning support to see it through the recovery period.

This example will be played out many times over in the central US. The seven states that make up CUSEC’s charter states have a rural population base of 32%. In the areas of the states that will experience the greatest ground shaking, .20-.10 the rural population base climbs to 50%. Their ability, much like Coalinga’s, will be limited at best. The need for outside investments before, during, and after the event is critical for the survivability of these communities.

Building Local Capacity As A Route To Sustainability

There is a definite need for more effort to be placed on helping rural communities build a more sustainable future in terms of balancing community livability, economic viability, and environmental sensitivity. These efforts must be built into the communities’ resilience to natural



hazards. The role of federal and state government, as well as organizations such as CUSEC, is essential in ensuring that mitigation practices before, during, and after, as well as a refined response plan, becomes an integral part of helping the community develop a sustainable future.

By offering guidance to a community and assistance when needed in areas outside of their capability as in development of Geographic Information Systems (GIS), grant writing, hazard database management, hazard mitigation planning, etc., the rural communities will be better positioned to deal with the unforeseen problems that will be associated with a disaster.

Rural communities should have a prominent place in the social, economic, and environmental landscape of our country. They have an indispensable role to play. Our involvement in helping to ensure their preservation before, during and after a disaster will help to foster an attitude that is desperately needed in this country - that the rural community is an integral part of who we are and the foundation on which this country is built upon.

“Never doubt that a small group of thoughtful, committed citizens can change the world. Indeed, it is the only thing that ever has.”Margaret Mead

References

Deavers K. What is Rural? **Policy Studies Journal** 20(2): 184 -189, 1992.

Updated American Red Cross Web Site

A new, updated, interactive listing of all available Community Disaster Education resources, including mitigation information, is available on the ARC web site at:

www.redcross.org/disaster/safety/cde.html

The listing provides information about printed and video materials that are available from the American Red Cross warehouse, as well as those available by direct links.

The categories of listings include:

- Media
- General Disaster Preparedness
- Teachers and Schools
- Videos
- Presenters Materials
- Materials for Children
- Materials in Spanish and Other Languages

MAE Center Works to Develop Shake Table Exhibit

The Mid America Earthquake Center is developing a small, interactive shaking table exhibit. The interactive display is being developed in cooperation with Southeast Missouri State University, the Missouri Department of Conservation, Saint Louis University, Washington University and CERI (University of Memphis). Being developed under the broad heading "The Shaping of Missouri," the exhibit is intended to teach that earthquakes not only shape the landform but also the natural environment. It is aimed at 7-15 year olds. The exhibit will include a game to construct and test a small building against an earthquake. The building may be constructed in timber, steel, or masonry.

When complete, the exhibit will be 1.5 by 1.2 meters and will stand about 1.6 meters in height. To be fitted with a glass or Plexiglass enclosure, the shaking table will accommodate an exhibit that is 0.6 by 0.9 m, either as a single or multiple dioramas. An interactive display tool is also being developed that can be used on a stand alone display or a web site to provide information on earthquakes. The first display will be tested at one of the Missouri Department of Conservation's Nature Centers located at Powder Valley in southwest St. Louis. The exhibit will then be relocated to the Nature Center being developed by the Department of Conservation at Cape Girardeau.

Report by the EERI Endowment Fund: Financial Management of Earthquake Risks

The most recent publication in EERI's Endowment Fund White Paper series is Financial Management of Earthquake Risks, prepared by the Committee for the Project on Financial Decisions and Catastrophe Risk. This white paper provides an overview of the following: 1) how financial risk is managed in the residential, commercial, small business, lifelines and government sectors; 2) how risk can be reduced, transferred or avoided through the use of insurance, mortgages and capital market instruments; and 3) how earthquake engineering expertise fits into this process. The discussion should be useful for the following audiences: 1) engineering students and faculty in understanding different career options that use engineering knowledge; 2) practicing engineers in understanding how the information they provide to various clients is part of the larger process of financial risk management; and 3) financial managers in gaining a better understanding of how the financial and earthquake engineering communities are interrelated.

This EERI white paper can be ordered for \$7 from the EERI office (California residents add 8.25% sales tax). Include \$3 for first class postage and handling.

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The Marmara, Turkey Earthquake of August 17, 1999: Reconnaissance Report Available

This report includes observations from two reconnaissance trips made by MCEER sponsored research teams. It is the product of many authors representing several disciplines and, while not a final assessment of the topics addressed, represents an interim earthquake engineering evaluation of the natural, built and social environments. As noted by several of the authors, the analogies between the North Anatolian Fault Zone in Turkey and the San Andreas Fault in the United States are strikingly similar. The observations and conclusions herein form a springboard for future collaborative research efforts, which will advance society's ability to better withstand the destruction caused by earthquakes throughout the world. Copies are \$35.00 each.

For Further Information:

Multidisciplinary Center for Earthquake Engineering Research Publications State University of New York at Buffalo Red Jacket Quadrangle Buffalo, NY 14261 phone: (716) 645-3391 fax: (716) 645-3399 email: mceer@acsu.buffalo.edu

DATES TO MARK

September 17-22, 2000 National Earthquake Risk Management Conference. Seattle Airport DoubleTree, Seattle, Washington
Contact WSSPC at wsspc@wsspc.org or 415/974-6435

October 12-13, 2000 Missouri Seismic Safety Commission Meeting -

Delta Center, Portageville, Missouri
Contact Ed Gray for more information 573-526-9131

October 16-19, Annual International Conference on Contaminated Soils, Sediments and Water University of Massachusetts at Amherst

Contact Denise Leonard at dleonard@schoolph.umass.edu or 413-545-1239

Week of November 12, 2000 Project Impact Summit, Marriott Wardman Park Hotel, Washington DC

The **Central United States Earthquake Consortium** is a not-for-profit corporation established as a partnership with the Federal government and the seven member states: Arkansas, Illinois, Indiana, Kentucky, Mississippi, Missouri and Tennessee; and ten associate member states: Alabama, Georgia, Iowa, Louisiana, South Carolina, North Carolina, Ohio, Oklahoma, Nebraska and Virginia. The Federal Emergency Management Agency provides the basic funding for the organization.

CUSEC's purpose is to help reduce deaths, injuries, damage to property and economic losses resulting from earthquakes occurring in the central United States. Basic program goals include: improving public awareness and education, mitigating the effects of earthquakes, coordinating multi-state planning for preparedness, response and recovery; and encouraging research in all aspects of earthquake hazard reduction. CUSEC supports the International Decade for Natural Disaster Reduction.

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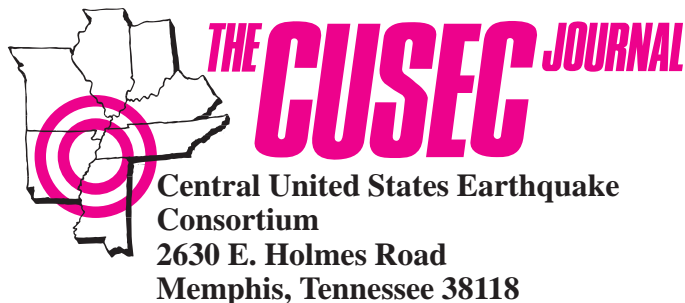
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