KEY INDICATORS OF RESILIENCE
Working Paper
Resilient Communities Research Consortium

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Success, reflective of a systems approach, in building and maintaining community resilience depends upon recognition of the interdependence of community planning and capacity building; economic development; health, social, and community services; infrastructure systems; natural and cultural resources; and information and communications.

The resilience indicators described below are based on the work accomplished during a Resilient Communities Research Consortium (RCRC) research development meeting in Monterey, CA, February 18-19, 2010. The focus of the meeting was development of indicators of community resilience and measures of the indicators that produce data from which an assessment of resilience status can be made. The work is based on review of primary documents, knowledge of other sources, and experience of the RCRC members. The indicators are being clarified through literature review, discussion with other research groups, and demonstration and discussion with candidate community groups. Revisions are being incorporated into a demonstration assessment system for conduct of pilot trials of the system in selected communities.

COMMUNITY PLANNING AND CAPACITY BUILDING

Community planning is a government-facilitated effort, in both the short and long term, which is aimed at maintaining stability and growth within and among jurisdictional areas. Recognizing that a community is a network of public, private, non-profit, and informal organizations and social structures, we believe that the community planning process is fundamental to a community's ability to attain a desired level of resilience. Planning and capacity building for resilience requires engagement and collaboration among these entities that may be facilitated, not owned, by government.

Example indicators for successful planning and capacity building include:
- government engagement in a formal planning cycle
- strength of community organizations
- professional planning staff

ECONOMIC DEVELOPMENT

Economic development is the set of efforts and activities in which communities engage to build business, grow jobs, and develop new opportunities with the goal of creating and sustaining their viability as communities. Economic development is coordinated and collaborative in nature. Either government or private sector entities or a collaboration of them may be the catalyst that

provides the initial for economic development engagement, but sustainable economic development requires community vision and full engagement by the private sector.

A sound infrastructure is necessary for sustainable economic development and a high quality of life, but investing in infrastructure does not always lead to economic growth. Innovation is a critical element for the creation and sustainability of economic development for viable communities. Public/private cooperation for innovation a d economic development requires balance and mutual respect for each party's institutional and legal constraints.

Example indicators for economic development include:

economic development plan status
diversification of economic base
business recovery planning

HEALTH, SOCIAL, AND COMMUNITY SERVICES

Resilience is reliant upon the health and well being of the community, and programs that sustain these needs are indicative of the community's degree of resilience. Aspects that reflect this relative resiliency indicator include programs that provide:

health care
social services
community services
continuing education
outreach to vulnerable populations

Example indicators for health, social, and community services include:

healthcare resources and facilities
strength and involvement of social service agencies in the community
strength and involvement of faith-based agencies in the community

INFRASTRUCTURE SYSTEMS

Physical infrastructure systems are the foundation for supporting human and organizational activity in a community. The infrastructure enables most of the other resilience-oriented activities. Infrastructure includes public and private assets such as utilities, transportation, hospitals, buildings and other developed resources of the community. One of the ongoing functions of the community is the development, maintenance, and growth of its infrastructure.

Quantity and quality of existing infrastructure is essential to resilience. Losing infrastructure makes the community less resilient. All emergencies involve infrastructure. Many emergencies directly impact infrastructure (e.g. failure of a bridge, disruption of power supply, etc.). Loss of infrastructure is itself an emergency.

Example indicators for infrastructure systems include:

risk and vulnerability assessment
hazards mitigation plan
adequacy of community resources to restore essential services

NATURAL AND CULTURAL RESOURCES

Resilient communities are characterized by mutual respect and tolerance among different ethnic and cultural communities and other stakeholders. Natural and cultural assets are indigenous to a geographic area, tribal nation, U.S. territory or other unique community.

The United States is increasingly culturally diverse. Preserving natural cultural resources and environmental integrity of these resources is critical to economic viability, quality of life, and resilience. Government helps preserve cultural assets and establishes the legal and regulatory framework for the utilization of natural resources. Non-governmental organizations frequently complement public and/or private initiatives. Natural and cultural resources are key community assets as recognized in the National Disaster Recovery Framework: "A systematic, interdisciplinary approach is used to understand the interdependencies and complex relationships of the natural and cultural environments" (NDRF, 2-5-2010, draft: p. 40).

Example indicators for natural and cultural resources include:

community identity
community parks/refuges and recreation opportunities
cultural and historical landmarks

INFORMATION AND COMMUNICATIONS

Communications is the processes that enable the exchange of information. Uses of communications systems include improving knowledge, coordinating activities and fostering the creation of ideas.

Effective communications provide relevant (actionable) information to the appropriate people in a timely manner. An effective emergency communication system is really a system-of-systems which contains a number of instances of the above model targeted to specific situations and phases. These subsystems are interlinked in complex ways.

Effective and efficient emergency communications systems involve aspects of coverage, access, relevance, correctness, precision, form, format, trust, credibility, and timeliness.

Example indicators for information and communications include:

    citizen awareness and trust
    risk and vulnerability communications plan
    involvement of stakeholders in the communications and information plan
    communications channels coverage in the community

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Resilient Communities Research Consortium (RCRC) Research Agenda

The RCRC research agenda is focused around these themes:

❖ Understanding how communities view themselves.
❖ Understanding barriers and what factors commit a community to resilience building and maintenance engagement.
❖ Identifying tools that are effective for helping communities change resiliency status.
❖ Identifying specific hazards and vulnerabilities communities face.
❖ Identifying the indicators of resiliency.
❖ Evaluating a research-based approach to a technical assistance and outreach program for helping community establish and maintain resilience.

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