San José State University

CSU Monterey Bay

Partnership Building for Risk Reduction

Miguel Tirado
California State University, Monterey Bay
Guna Selvaduray
San Jose State University
December 12, 2006

San José State UNIVERSITY

CSU Monterey Bay

Presentation Outline

- Examples of University Contribution to Disaster Preparedness
- Partnership Structure
- Proposed Training Initiative in South Bay

San José State UNIVERSITY

CSU Monterey Bay

Purpose of Partnerships

- Together we can accomplish more than the sum total of what we can do individually
- Each partner contributes a "strength" area
- Avoid reinventing the wheel

San José State UNIVERSITY

CSU Monterey Bay

Societal Constituents

Sector	**Role**
Public/government	Responsible for emergency response
Private/commercial	Creates wealth/revenue, provides essential services
Educational	Has multi-disciplinary knowledge to improve risk reduction
General Public	Backbone of society, at risk population group

San José State UNIVERSITY

CSU Monterey Bay

PRACTICAL APPLICATIONS OF THEORY TO DISASTERS

- Social Network Analysis
  - Integrates informal and formal networks
  - Positions disaster communications to maximize effectiveness of the local response
- Improvisational Leadership Theory
  - Training for local leaders to understand how to improvise and adapt in the face of future disasters

San José State UNIVERSITY

CSU Monterey Bay

SOCIAL NETWORK MAPPING

- Problem: Failure to understand "tendons and sinews" of a community before the disaster happens
- Questions:
  - What is the capacity for community self-reliance in a disaster?
  - What are communication technology channels when infrastructure is disrupted?
  - Who are the key community members and organizations which can serve as communications nodes in a disaster?

San José State UNIVERSITY

CSU Monterey Bay

KATRINA STUDY

- Goal: Study the role of informal leadership and communications following Katrina in Bay Saint Louis, Miss, and St. Bernard Parish, LA
- Interviewed respondents who were inside and outside the formal communications protocols
- Asked questions about organizational, technological and communications challenges
- Rare opportunity to conduct one-on-one interviews following a disaster

San José State UNIVERSITY

CSU Monterey Bay

KATRINA STUDY CONCLUSIONS

- Reliance on informal communications networks based on prior relationships
  - Louisiana – 71%
  - Mississippi – 75%
- Depended only on face-to-face communications
  - Louisiana – 31%
  - Mississippi – 41%
- Technical communications failures
  - 86 % of all respondents

San José State UNIVERSITY

CSU Monterey Bay

Social Preconditions for Effective Wireless Applications in Disaster

- Social Trust
- Robust Social Networks
- Accepted Social Norms for Distribution and Use

San José State University

CSU Monterey Bay

BAY ST. LOUIS, MISSISSIPPI

San José State UNIVERSITY

CSU Monterey Bay

KATRINA COMMUNICATIONS LESSONS

- "Nothing compares to having a prior relationship in a disaster"

  (Mark Chambers, local Mississippi official)

- Higher the number of personal contacts between officials and community members greater the swift trust in a disaster
- Communications technology must be resilient, low cost and respect local community's social network

San José State UNIVERSITY

CSU Monterey Bay

STRONG ANGEL 3

- Simulate information sharing in a real world disaster
- Co-hosted by San Diego State University in August 2006 with the support of the Defense Department, private technology companies and NGO's
- Involved 300 participants in response to a pandemic threat involving terrorists

San José State UNIVERSITY

CSU Monterey Bay

SOCIAL NETWORKS

- "The right people-social networks- in a disaster are critical"
- "Human interoperability occurs before the actual disaster, during the social networking that occurs as officials learn about, build trust in and accommodate each other's operating practices"

(Linton Wells, Deputy Assistant Secretary of Defense of Networks and Information Integration)

San José State UNIVERSITY

CSU Monterey Bay

Mapping during Strong Angel

- Interviewed participants at prescribed desk locations according to disaster protocols
- Plotted participants' movements and linkages over course of exercise and tracked them on a physical map
- Identified variance of actual interactions from accepted protocol, and trust levels
- Identified best attributes of communications technologies

San José State UNIVERSITY

CSU Monterey Bay

NGO TECHNICAL CONCERNS DURING STRONG ANGEL 3

- COMMUNICATION TECHNOLOGY MUST
  - Strengthen community's ability to communicate and influence resource decisions in a disaster
  - Consider post disaster social and economic implications of technology deployment
  - Accommodate ease of use and modification to local environment
  - Support an integrated architecture and open standards

CSU Monterey Bay

San José State UNIVERSITY

CSU Monterey Bay

Collaborative for Disaster Mitigation (CDM)

- Established September 1999
- Funded by FEMA in July 2000
- Focus on facilitating multi-disciplinary knowledge for disaster mitigation
- Develop a local model of excellence in collaboration and mitigation implementation
- Enable high level of trust and ease of communication among the participants

- Three operative words
- Collaboration: *Public, private, non-profit, academia; we are in it together*
- Mitigation: *What can we do ahead of time?*
- Implementation: *A stitch in time saves nine; practical; cost-effective*

San José State UNIVERSITY

CSU Monterey Bay

CDM's Activities

- Conferences, Symposia
- Translation Projects
- MPA Program
- CEM Lecture Series
- Cost/Benefit Analysis
- Mitigation Works! Webpage
- International Collaborations
- Small Business Hazard Mitigation
- Lab Hazard Mitigation Project
- Safety of Laboratory Chemicals
- Earthquake Safety of Glass Window Panes
- Inventory of Soft-First Story Structures
- Warehouse Storage Rack Safety Analysis

San José State UNIVERSITY

CSU Monterey Bay

Proposed Training Initiative in South Bay

- Purpose: Evaluate linkage of various constituencies in dealing with a coordinated emergency response
  - To what extent did communication occur as prescribed, and how did it function?
  - What was the most appropriate technologies for which purpose?
  - What was the "interplay" among the various constituents?
  - How much did actual interaction depart from accepted protocols?
  - Evidence of improvisational leadership

San José State UNIVERSITY

CSU Monterey Bay

Exercise Details

- Location: SJSU
- Scenario Development: CSUMB & SJSU
  - In conjunction with participants
  - Participants have to deal with a rolling set of emergencies and challenges that they have to respond to
  - Fed Govt requiring local jurisdictions to conduct pandemic-related exercises
- Faculty and graduate students:
  - Track interactions and movements as conditions change
  - Analyze extent to which prescribed model worked
  - Provide feedback

San José State University

CSU Monterey Bay

Questions, Comments, Ideas?