



How Do We Measure Disaster Preparedness—And How Do San Francisco CBOs Measure Up?

Kathleen Tierney

Natural Hazards Center

University of Colorado, Boulder

Disaster Resilience Standard and Continuity of Operations

Workshop for Community and

Faith-Based Organizations

San Francisco, Feb. 18, 2009



Background

- Natural Hazards Center Asked to Collaborate with Fritz Institute on Preparedness Measurement in 2006
- White Paper “Disaster Preparedness: Concepts, Guidance, and Research” (2006) Discussed at Assessing Disaster Preparedness Conference, Nov. 2006



Materials Reviewed for White Paper

- Surveys on Preparedness (UCLA CPHD archive & DRC surveys on business preparedness)
- Preparedness Guidance and Checklists (Red Cross, FEMA, IBHS, NPFA 1600, DHS Target Capabilities, EMAP, CDC, BENS, JCAHO)
- Business Continuity Journals
- Social Science Literature on Disaster Preparedness

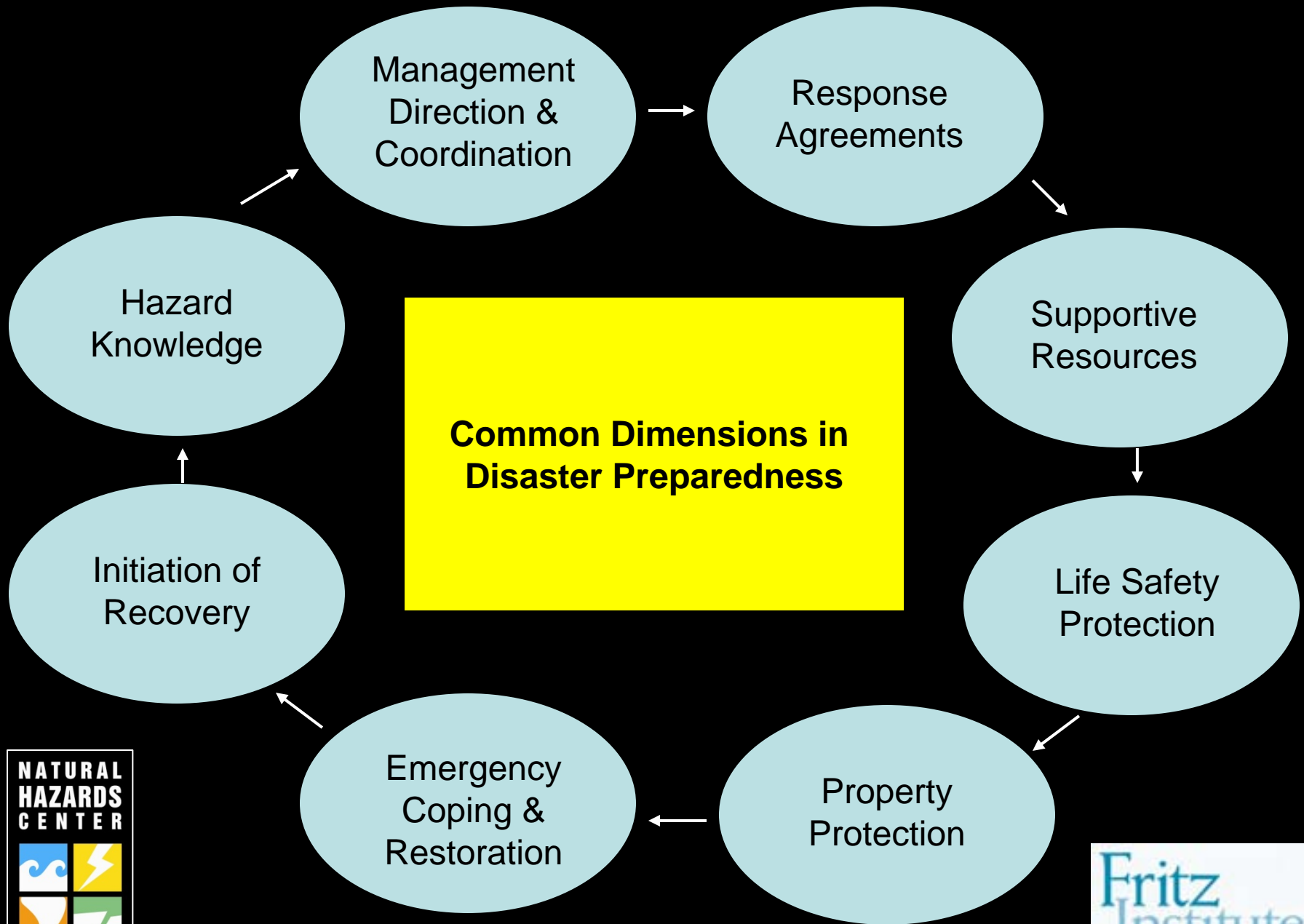


Hazards Center/Fritz Institute White Paper

- 44 page report; 10 appendices
- Topics Addressed:
 - Elements and Dimensions of Disaster Preparedness
 - Preparedness Measures Across Units of Analysis
 - General Principles of Preparedness



**Common Dimensions in
Disaster Preparedness**



San Francisco CBO Preparedness Study (2007-2008)

- Stratified randomly-selected sample of San Francisco CBOs
- Face-to-face interviews, taped and transcribed
- 93 interviews conducted



BayPrep Initiative Completed Interviews

| Category | Number of Interviews |
|----------------------|----------------------|
| Food | 16 |
| Health/Mental Health | 18 |
| Housing | 16 |
| Multiple Services | 22 |
| Social Services | 21 |
| Total | 93 |



Topics Covered in Interviews

- Organizational characteristics (size, budget, etc.)
- Facility characteristics (e.g., age of structure, retrofits)
- Client characteristics
- Perceptions of risk
- Perceptions of disaster impacts on CBO operations, clients
- Disaster preparedness



Preparedness-Related Measures in CBO Interview Guide

- Questions on staffing and plans:

Within your organization, is there a particular person responsible for disaster planning?

Within your organization, is there a committee assigned to address disaster planning?

Does the organization have a written disaster plan?

(If no plan, why not?)



BayPrep Preparedness Checklist

- Respondents completed a 30-item checklist indicating the activities undertaken by their organizations to prepare for a major earthquake or other large-scale disaster, in the last year, 2-3 years ago, more than 3 years ago, or never
- Checklist items reflect eight dimensions of preparedness identified in the white paper—but do not constitute a comprehensive listing



Organizational Disaster Preparedness

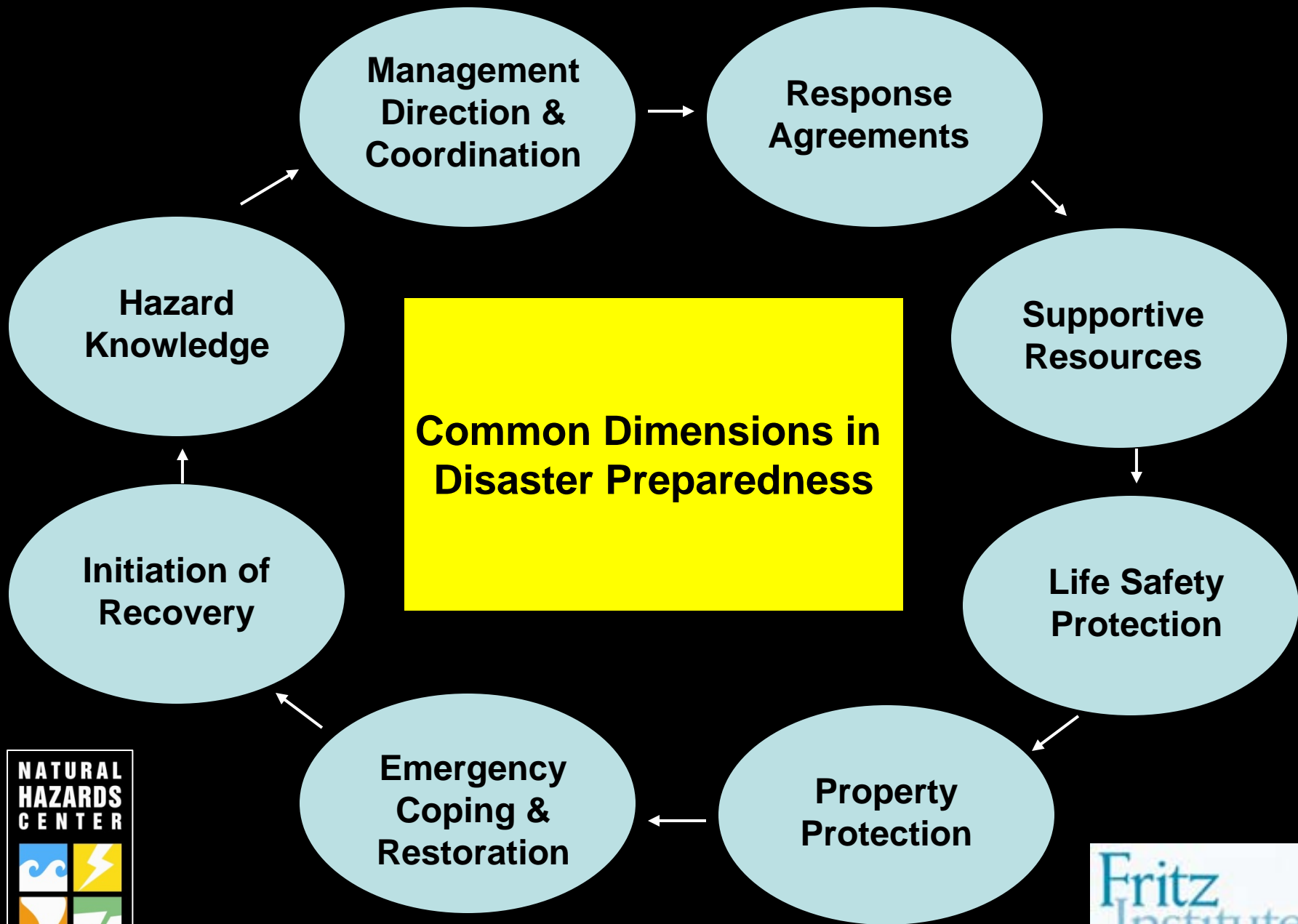
| Question: | Percent Responding "Yes" |
|---|--------------------------|
| Within your organization, is there a particular person responsible for disaster planning? | 67.7% |
| Within your organization, is there a committee assigned to address disaster planning? | 40.2% |
| Does the organization have a written disaster plan? | 64.1% |



Which Organizations Have Plans?

- Housing organizations are most likely to have a plan (94%), followed by health and mental health (78%), multiple service agencies (70%), social services (50%) and food providers (31%)
- Larger organizations (as indicated by budget size) are more likely to have plans





“Check the appropriate box to indicate which activities your organization has undertaken to prepare for a major earthquake or other large-scale disaster event.”

(Mark the most *recent* period during which the activity was conducted.)

| HAZARD KNOWLEDGE | Time Frame | | | |
|--|------------|-----------|-----------|-------|
| | 1 Year | 2-3 Years | > 3 Years | Never |
| Obtained educational brochures or printed information from government agencies on how a major earthquake or other disaster would affect the area | 55.7 | 20.5 | 4.5 | 19.3 |
| Attended meetings or heard talks on how a major earthquake or other disaster would affect the San Francisco area | 61.8 | 12.4 | 7.9 | 18 |
| Obtained information from newspapers, radio, television, the Internet, or other communications media on how a major disaster would affect the area | 65.2 | 15.7 | 7.9 | 13.5 |
| Distributed information to your clients on how a major disaster would affect the San Francisco area | 30.2 | 10.5 | 9.3 | 50 |
| Sought information on how the building(s) that house your organization could be affected by a major earthquake in the area | 28.1 | 12.4 | 11.2 | 48.3 |
| Had the building(s) inspected by a structural engineer or other building professional | 24.4 | 16.7 | 25.6 | 33.3 |
| Identified and reduced non-structural hazards in your building (such as bolting furniture to walls) | 30.2 | 24.4 | 15.1 | 30.2 |

“Check the appropriate box to indicate which activities your organization has undertaken to prepare for a major earthquake or other large-scale disaster event.”

(Mark the most *recent* period during which the activity was conducted.)

| MANAGEMENT DIRECTION & COORDINATION | Time Frame | | | |
|---|------------|-----------|-----------|-------|
| | 1 Year | 2-3 Years | > 3 Years | Never |
| Formed a preparedness committee for the organization | 37.1 | 7.9 | 14.6 | 40.4 |
| Provided training and educational materials for your staff concerning their roles during a major disaster | 53.4 | 11.4 | 6.8 | 28.4 |
| Taken or required employees to take a training course the Incident Command System | 19.1 | 5.6 | 3.4 | 71.9 |
| Held a disaster drill for employees | 48.3 | 10.3 | 8 | 33.3 |
| Taken part in an interagency or citywide disaster drill | 11.4 | 5.7 | 14.8 | 68.2 |
| Developed a written disaster plan for your organization | 52.3 | 9.1 | 9.1 | 29.5 |
| RESPONSE AGREEMENTS | | | | |
| Entered into formal preparedness/response agreements with other non-profits in the Bay Area | 16.9 | 5.6 | 10.1 | 67.4 |
| Entered into formal preparedness/response agreements with city/county government | 20.5 | 2.3 | 9.1 | 68.2 |
| Entered into formal preparedness/response agreements with other organizations outside the Bay Area | 6.7 | 1.1 | 4.5 | 87.6 |

“Check the appropriate box to indicate which activities your organization has undertaken to prepare for a major earthquake or other large-scale disaster event.”

(Mark the most *recent* period during which the activity was conducted.)

| SUPPORTIVE RESOURCES | Time Frame | | | |
|--|------------|-----------|-----------|-------|
| | 1 Year | 2-3 Years | > 3 Years | Never |
| Obtained emergency food and water for use by your organization in a disaster | 57.3 | 5.6 | 5.6 | 31.5 |
| Obtained first aid supplies for use by your organization in a disaster | 66.3 | 9 | 6.7 | 18 |
| Obtained a generator to provide emergency power in case of electric power outages due to an earthquake or other disaster | 10.3 | 0 | 10.3 | 79.3 |
| Made plans to share resources with other organizations (including government organizations) in the event of a major disaster | 23.6 | 6.7 | 6.7 | 62.9 |



“Check the appropriate box to indicate which activities your organization has undertaken to prepare for a major earthquake or other large-scale disaster event.”

(Mark the most *recent* period during which the activity was conducted.)

| LIFE SAFETY PROTECTION | Time Frame | | | |
|--|------------|-----------|-----------|-------|
| | 1 Year | 2-3 Years | > 3 Years | Never |
| Provided life-safety disaster training for your staff—that is, training to avoid death or injury should a disaster strike while they are at work | 38.2 | 9 | 9 | 43.8 |
| Provided training for clients on how to avoid death or injury should a disaster strike | 23 | 6.9 | 4.6 | 65.5 |
| Encouraged your staff to develop household disaster plans | 10.3 | 10.3 | 9.2 | 37.9 |
| PROPERTY PROTECTION | | | | |
| Provided training for your staff on emergency fire suppression, shutting off gas lines, etc. | 39.1 | 12.6 | 10.3 | 37.9 |
| Secured data and critical records (i.e., offsite or on redundant computer systems) in case of disaster | 53.5 | 7 | 4.7 | 34.9 |

“Check the appropriate box to indicate which activities your organization has undertaken to prepare for a major earthquake or other large-scale disaster event.”

(Mark the most *recent* period during which the activity was conducted.)

| EMERGENCY COPING & RESTORATION | Time Frame | | | |
|--|------------|-----------|-----------|-------|
| | 1 Year | 2-3 Years | > 3 Years | Never |
| Developed a notification system for staff members and volunteers that can be activated in case of disaster | 42 | 6.8 | 11.4 | 39.8 |
| Developed a continuity-of-operations plan in case of disaster—that is, what you would do to remain operational | 26.4 | 9.2 | 11.5 | 52.9 |
| INITIATION OF RECOVERY | | | | |
| Identified long-term recovery resources (such as insurance, physical resources, financial resources) | 34.5 | 8 | 10.3 | 47.1 |



Mean Scores and Standardized Ratio Scores of Disaster Preparedness Among Organizations

| Dimension of Disaster Preparedness | No. Items (Activities) on Checklist | Mean Score | Standardized Ratio Score |
|---------------------------------------|-------------------------------------|----------------|--------------------------|
| Hazard Knowledge | 7 items | 5.10 out of 7* | .73 |
| Management Direction & Coordination | 7 items | 3.95 out of 7* | .56 |
| Formal & Informal Response Agreements | 3 items | 0.76 out of 3* | .25 |
| Supportive Resources | 4 items | 3.09 out of 4* | .77 |
| Life Safety Protection | 4 items | 1.96 out of 4* | .49 |
| Property Protection | 2 items | 1.28 out of 2* | .64 |
| Emergency Coping & Restoration | 2 items | 1.07 out of 2* | .54 |
| Initiation of Recovery | 1 item | 0.52 out of 1* | .52 |

*Significant at the .05 level.

Some Conclusions From Our Research

- San Francisco CBOs Risk Losing Functionality from Several Sources in the Next Big Disaster
 - Collapse or Major Structural Damage
 - Nonstructural Damage
 - Lifeline Service Outages
 - Staffing Issues
 - Supply Chain Disruptions (Food Sector)



Some Conclusions From Our Research

- CBOs are Under Prepared for the Next Major Disaster and Will be Stretched Well Beyond Capacity When That Disaster Strikes
- A Significant Majority of CBOs Have Written Disaster Plans, but the Plans Vary in Quality and Comprehensiveness



Some Conclusions From Our Research

- Lack of Preparation is Not Due to Lack of Awareness; Rather, Resource Shortages, Overwhelming Staff Demands, and a Lack of Concrete Guidance Are Largely Responsible



**Natural Hazards Center
Institute of Behavioral Science
University of Colorado
303-492-6818**

<http://www.colorado.edu/hazards>



www.colorado.edu/hazards

