GeoHazards International
Central Asia Earthquake Safety Initiative
Urban Risk Reduction Framework

A methodology and selected tools
to promote community risk assessment and
strategic planning and monitoring
for natural hazards safety initiatives in large urban areas.

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SUMMARY:
The purpose of this planning framework is to provide a strategic approach to assessment, planning, implementation and monitoring of community-based disaster risk reduction measures in large urban areas facing risks associated with seismic and other natural hazards. It relies upon an iterative and ongoing process and suggests some tools designed to engage stakeholders and safety advocates in sharing hazard awareness, concerns, current strategies-in-practice and collective planning .

Staff support is suggested to gather baseline information from stakeholders, compiling inputs and coordinating a report to be updated annually, and against which collective progress can be measured.

The objectives are:

• To promote norms that build and support a culture of safety

• To develop a shared understanding of both collective achievements and urgent tasks,

• To engage stakeholders in priority-setting and collaborative planning.

• To mobilize systematic and collaborative efforts to mitigate risks and to encourage all of the small incremental steps along the way.

The framework has five steps:

Step One: Identify Stakeholders and Advocates
Step Two: Collect Baseline Data (including norms and activities) through Individual Interviews and Small-Group Stakeholder Meetings
Step Three: Draft the (First Baseline or) Annual Report
Step Four: Hold Large Group (Annual) Stakeholder Meeting to Review Norms, Evaluate Priorities, Discuss Collaboration, and Form

Action Groups
        Step Five: Communication, Ongoing Action Planning Groups including
                        Periodic Review
        Step Six: Ongoing or rotating staff support to guide repetition of annual
                        cycle.

BACKGROUND:

Disasters continue to spur us to seek more effective ways to anticipate and reduce the impacts of natural hazards on human life. Neither enlightened social policy nor individual good intentions alone has been effective. Mitigating disaster impacts requires a deep understanding, collective imagination, and integration of a culture of safety into the fabric of society at all levels of social organization. It calls for a comprehensive approach and broad participation. A very wide range of stakeholders must be brought into contact with one another interacting cooperatively and synergistically with people outside of their usual domains.

Definitions of vulnerability frequently refer to resource impoverishment, but seldom to the critical lack of access to the specific knowledge needed by large populations for self-protection. Powerlessness in the face of natural hazards has been linked over and over again to the failure of whole regions and communities to anticipate and to take protective measures against events that, however infrequent, have been described by scientists as expected. Knowledge denial is perhaps the most subtle form of oppression, because among technical experts knowledge of the hazards seem widespread and obvious. Yet until this information is shared with the people who must make use of it, it cannot provoke the reciprocal knowledge needed to generate feasible and effective solutions.

Similarly, it is common to hear technical experts focus on the need to reach "decision-makers" at the policy level and thereby lose sight of the significant decision-making or decision-avoidance that is taken everywhere by individuals in small groups, in the family, the workplace, the school, indeed in every social setting. While it is clear that at the policy-level important decisions must be taken about legal frameworks, the use of collective resources, and research priorities, it is equally and sometimes more important to assure that understanding and compliance must make those policies realistic and effective. There are many examples where public awareness, grassroots efforts and steady cultural change precede enlightened policy-making.

A very important part of the action to reduce vulnerability is a series of small steps that must be implemented at the level of the neighborhood, the organization, the community and at the household level. Ultimately each piece of the puzzle is in the hands of a human actor who can contribute consciously to the solution, or is in danger of unconsciously undermining it.

Each social unit in a community needs to regard itself as stakeholders in this process. Vulnerability and decision-making exists at many levels, and so too must preparedness

and mitigation. The effort and the collaboration must be sustained for a long period of time, in order to reduce risk significantly.

Much of our experience in "community-based disaster mitigation" has so far been in the rural arena, where at the village level, remarkable accomplishments have been achieved by a handful of people. Rarely however, have these been scaled up to the level necessary for to institutionalize change.   It is not, therefore, surprising that the classic village-scale approach, applied to the urban neighborhood, is feels so wholly inadequate, and the results dishearteningly miniscule.

For government agencies, international funders, non-governmental agencies, scientists, and citizen activists, the desire to make a significant impact is strong. But where should they begin? What should they do? What are the missing and urgent tasks? These are questions that are best answered collectively through the discovery and interaction of an ever-widening group of stakeholders whose shared goal is to decrease deaths, injuries, and economic, social and cultural losses due to disasters with natural or man-made triggers.

Our desire here is to create a process and some tools that will:
> • provide a credible framework for a comprehensive needs assessment
> • act as a template for a baseline report, and recording, monitoring and communicating subsequent progress in disaster mitigation in the city.
> • share information for raising awareness and communicating risk and a systematic rubric for communicating a complex array of information.
> • Encourage stakeholders to identify and evaluate risks and resources in order to determine priorities, and select feasible and sustainable mitigation projects.
> • Serve as a transparent communication tool to help stakeholders with a variety of specific interests to contribute, understand one another's assumptions, see their own roles and responsibilities within the larger context of comprehensive disaster mitigation, and become partners in the city-wide Earthquake Safety Initiative

STEP ONE: IDENTIFY STAKEHOLDERS
The first step in implementing this process is to embark upon the identification of potential stakeholders. Some of these will readily identify themselves and their organizations as key players. Others may indeed not initially perceive themselves as stakeholders, but as the dialogue proceeds, they are encouraged to recognize their ability to contribute, and to sign on. During this step a database is created which must be maintained and expanded on an ongoing basis. The principal at work is that "there is always more room at the table." Everyone is welcomed, and as the functional tasks are defined by the group, newcomers can be rapidly oriented and integrated into the work.

The Stakeholder Database is the evidence of a deliberate effort to identify potential stakeholders, and contains the necessary information to invite participants, keep them informed, and involve them increasingly through information-sharing. The development

and maintenance of a Stakeholder Database is an ongoing task of the project. It is much more than an administrative detail - it is at the heart of the community mobilization effort. A growing stakeholder database signifies a growing culture of safety.

The fields in the database are minimally:
First name, Last name, job title, organization, telephone number, alternate telephone number, fax number, e-mail, street address, city, district, postal code. The database is comprised not of organizational representatives, but rather of individuals. It is tempting in many environments to select a high-level organizational representative, or even an enthusiastic advocate, and hope that that individual will function as a conduit to others in their organization. In practice however, in any organization there are potentially dozens of individuals who are both interested and capable of participating. Relying on a single link, even though it might be the highest in a chain of authority, makes it exceedingly easy for the link to be broken. While these observations are perhaps second nature to organizers, and the very notion of "stakeholder" is fundamental to democracy and governance, it is an entirely novel concept in many peoples cultural, political and social experience.

To be sure that you have not missed any potential stakeholders, use the **Table 1: Stakeholders in Disaster Risk Reduction** (See Addendum) as suggestions for all the categories of individuals whose may already been interested in disaster mitigation, or who may be reached out to and involved.

STEP TWO: BASELINE DATA COLLECTION
Data collection itself is part of the process of increasing risk awareness. By being asked to contribute information, being asked questions, and opening discussions of problems, individuals and organizations will have the opportunity to make what they know explicit, and to practice sharing it with others. This is expected to prompt them to also examine their own resources and vulnerabilities. The process is intended to facilitate appreciation of what is known about the risks, the mitigation measures that have been taken, and the need to problem-solve and prioritize next steps. The tables and tools described in step three can be used in this step as well. This data collection phase is simultaneously a continuous organizing opportunity, during which time the staff person is constantly sharing ownership and discovery with other stakeholders.

> **2.a. Document Collection and Review –** Data collection begins with an effort to collect available data such as vulnerability and risk assessment, building codes, emergency plans, school curricula, public awareness brochures, disaster response plans, and other documents relating to emergency preparedness and mitigation. This information is reviewed and summarized as "background information", and is used to generate questions and concerns.

> **2.b. Structured Interview Questionnaires for Key Informants** – Wherever appropriate, questionnaires can be used as a guide for one-on-one interviews of key

informants on city planning, emergency response, building inventory, school buildings, medical emergency preparedness, hospital emergency preparedness, post-earthquake fire preparedness, and seismology, soil and landslides. One of these is the structured interviews that are part of GHI's lethality estimation methodology, which can be enhanced for a broader-range of information-gathering.

2.c. Brief Surveys – In order to inform the stakeholder initiative process, it is useful to have a simple survey instrument to measure a baselines of risk awareness (knowledge level) and risk mitigation (behavior) found among both emerging leadership and citizens at large, and at both the individual and organizational level. Later these same instruments can be used to measure changes as a result of mitigation projects. Basic disaster awareness pre- and post-test instruments developed by BU KOERI Disaster Preparedness Education Program, designed for comparability with international literature on household hazard adjustments, and similar instruments can be adapted for this purpose.

2.d. Small Group Stakeholder Meetings & Focus Groups – Visits and meetings should be organized with small groups of stakeholders at academic and scientific institutes, government agencies and departments, with international governmental organizations, with non-governmental organizations in development, health, education and environmental sectors especially, with leaders of community-based organizations, and with business leaders.

Discussions are used to learn the involvement of these organizations in disaster preparedness and mitigation activities, their perceptions, concerns and priorities. Skillful, reflective listening and report-writing will enable facilitators to gather consensual perspectives on analytic themes, and to help stakeholders engage in the process and it's outcomes. These are also a place to take the pulse of participant satisfaction, impact and sustainability. As concerns are acknowledged and documented, stakeholders will begin to look forward to seeing their concerns shared with others.

2.e. Case Studies – Case studies can be documented to demonstrate needs and problems as well as lessons learned and best practices. These case studies will serve to describe in more detail the problems and progress. Positive case studies should enhance institutional memory and provide a real life example for others to follow. Again this process of acknowledging of achievements is very important to the identification of resources, and beginning to see the glass as partially full, rather than largely empty. Recognizing and celebrating successes is critical to motivating the next round of effort.

2.f. Direct Observation - It is especially important for organizers and a wider range of participants to directly experience some of the available training activities and mitigation projects. Staff should be creative in inviting individuals from one setting to

accompany them as observers in other settings that they may not have experienced. Too often direct experience is limited to a very small in-group, and the benefit of having an outside witness provide unsolicited testimonials is never experienced.

STEP THREE: DRAFT THE ANNUAL RISK REDUCTION REPORT
Planning rather than being a systematic and premeditated activity, is more often a patchwork of disparate but well-intentioned efforts. While not a fully deliberate and conscious collective activity, it is nevertheless a "plan-in-practice". It behooves us to appreciate this rather than denigrate it. Every good plan is a work-in-progress, and therefore our goal is not to write a single plan for publication and shelving, but rather to begin a rolling plan that will be under constant revision, in practice. The Annual Risk Reduction Report is in fact a "Rolling Plan" or a "plan-in-practice". It can be revised formally on an annual basis, in order to provide a communication tool, and in order to gradually incorporate needed elements to evolve into a more complex and comprehensive plan. While messy, such a rolling plan is much more reflective of the process of planning, and can be more helpful than a blueprint that goes unused.

Drafting the report provides the opportunity to initiate and expand dialogue between stakeholders. During the Central Asia Earthquake Safety Initiative (2003-2005), the first Annual Risk Reduction Report was drafted covering the following outline: (See Table 2: Annual Risk Reduction Report Template)

I. BACKGROUND
A. Brief Description of Geographic, Social, Economic, Political and Cultural Environment:
Based on data collected, staff should prepare brief description to introduce the framework, to set the stage for outsiders.
B. Brief Description of Known Risks: Based on data collected staff should prepare brief description to introduce the framework.

II. Risk Reduction Strategic Planning Fundamentals
For planning purposes, stakeholders should consider the fullest possible scope of urban earthquake mitigation activities. Based on the literature in disaster risk reduction and urban planning, these are broken down into three major spheres of activity: **Risk Assessment and Planning, Physical Protection,** and **Response Capacity Development.** This provides a manageable focus for a new community planning effort. "Risk Assessment and Planning" are promoted as one, in order to challenge stakeholders with the notion that risk assessment without planning and planning without risk assessment are equally useless, and that therefore they should be considered in the same breath.

"Physical Protection" has four sub-headings for structures, infrastructure, non-structural mitigation, and environmental protection. "Response Capacity Development" includes response provisions and response skills development.

For each of the 6 subheadings, the following **Strategic Parameters** were delineated:
   Concerns and Goals (Norms)
   Applicable Laws & Policies
   Responsible Government Agencies
   Weaknesses & Threats
   Strengths & Resources
   Stakeholders & Their Roles
   Strategies in Use

A broad list of "Concerns and Goals" in each area, found in both research and practice literature, is provided for consideration by stakeholders. This list is broken down into specifics at three different levels of community: (See Table 3)
SMALL (micro): The individual, the family, the household.
MEDIUM (meso): The organization, the institution, the business, the hospital, the school, the housing complex, the neighborhood, local government, action-based research.
LARGE (macro): The government, policy and large-scale research and planning.

This breakdown helps to achieve two things: To enable stakeholders to see the full scope of disaster mitigation with roles for stakeholders at every level of society and to emphasize the inter-relatedness and necessity for activity in each of these areas. Assessment and Planning are linked in order to emphasize that neither is meaningful without the other. Physical protection is highlighted because it is often the neglected core of disaster risk reduction. Response capacity development is revealed as being a part of the larger picture, but by no means the entire focus of effort.

In the process of initial data collection, the list should be revised and expanded to fit local conditions. All stakeholders should have an opportunity to review all sections of the rolling strategic plan, and to get involved in activities in at least one area. Sharing a common set of information about the big picture will help to develop integrated perspectives, and some consensus for planning

The "Concerns and Goals" for each of 6 spheres of action (Assessment & Planning, Physical Protection: structures, infra-structure, non-structural, environmental, and Response Capacity Development (skills & provisions)
are placed in a large matrix that can be printed, and blown up into poster-sizes for discussion and priority-setting in a group setting. Later in the context of a large stakeholder meeting, breakout groups with experts and people interested in each sphere of activity, can address these norms and determine a collective quantitative assessment of both "achievement" and "urgency". Numeric values assigned to "Achievement" can be subtracted from "Urgency" in order to reveal the relative "Achievement Gap" in reaching each goal. Priority-setting may then consider this, as well as feasibility.

3.c. Risk Reduction Strategies and Initiatives The process of identifying and describing strategies or initiatives already in place is an opportunity to acknowledge all efforts and exchange enough information that stakeholders can focus strengthen each others efforts and identify and fill gaps based on sound knowledge.

Each strategy, whether in current practice, recently completed, or being proposed should be recorded on a **Risk Reduction Strategies Directory - Listing Form**. This form specifies which sphere(s) of activity (planning and assessment, physical protection, response capacity development) and which levels of society they are targeting (micro, meso or macro).

If possible, each of these should delineate:
Name of Strategy:
Lead Organization:
Cooperating Organizations:
Goal:
Interim Objectives:
Methods:
Geographic Area:
Target Population:
Time Frame:

The purpose of sharing this programmatic information is again to help stakeholders to develop a broad vision so that they can appreciate their richness and complexity of these combined efforts, so that they can identify both gaps and opportunities, and to increase a sense of accountability to the larger group.

In participatory community-based mitigation work, much of the intervention will be found at the meso level. Empowerment, however, usually begins with simple micro level activities. It is important to draw the links between the personal and the political. Activists discover that "walking the walk" can make them more powerful and convincing advocates. It is important that behavioral changes at both the micro and meso levels be measurable. As people feel successful in activities that they have more control over, they will try to intervene in the wider group or social level. Compliance with building codes and adoption of the values of a culture of safety begin with the individual who may be thought of as an "early adopter". Meso level intervention is also significant in building cultural norms, especially in those cases where enlightened policies may exist but are not enforced or enforceable. Public education, consumer awareness, and knowledge–sharing that are the keys to widespread ownership and adoption of behavior consistent with a culture of safety. This bottom-up emphasis is expected to have long-term impacts, and eventually changes at the macro level will be reflections of these.

STEP FOUR: LARGE-GROUP STAKEHOLDER'S MEETING(S)

The purposes of large stakeholder meetings are:

a) To provide an opportunity for consensus-building in a broad-based, participatory plan of action with targets and responsibilities. This includes long-term goal identification, prioritization of medium and short-term strategies, and action-planning outlining specific initiatives that will be undertaken, and by whom.

b) To create the opportunity for information-sharing, networking and relationship-building among stakeholders and to encourage involvement of multiple stakeholders from different sectors.

c) To assist donors and funders in identifying worthwhile and feasible projects, are owned by urban communities.

It is suggested that the large stakeholder meeting take place over a 2-day period. A sample agenda would include:

I. Welcome from Public Officials

II. Introductory Remarks by Project Director

III. Report on Scope of Urban Disaster Mitigation
   a) Risk Assessment and Planning (at macro, meso and micro levels)
   b) Physical Protection (at macro, meso and micro levels)
   c) Response Capacity Development (at macro, meso and micro levels)

IV. Report on Strategies (old and current) (5 minutes per organization, may use poster presentations)

V. Breakout sessions for different interest groups: (eg. basic disaster awareness, anti-seismic construction, non-structural mitigation, health sector, education sector, response skills development, insurance program development

VI. Brief report back from workgroups.

VII. Brainstorming and evaluation of new recommendations

VIII. Formation of workgroups or committees to continue the work

IX. Report back from workgroups and wrap-up session

The written report should be shared in advance with registrants. The data in the repot can also be produced in large-scale visual format, with one matrix showing strategic parameters for each sphere of action. The Concerns and Goals Matrix ready to be filled in during break-out sessions, can be used to orient all participants to the full scope of the "big picture". Committees can report on each of the 3 wide spheres of activity, or all six subdivisions, depending on the amount of information to be shared. Alternatively, if stakeholders prefer, they can organize themselves into sectoral groupings (eg. education, health, government, business; each addresssing all of the spheres.) Each of the spheres of activity should be addressed within a fixed period in the timetable (eg. 30-60 mins. each).

To use the "Concerns and Goals Matrix" a facilitator should read across each cell, asking for feedback from the participants, using colored highlighter pens and asterisks to identify areas of high consensus and clear priorities. As new activities are discussed, details can be solicited in brainstorming fashion and delineated on a separate large poster sheet. Different stakeholders can be asked how they might be able to be involved in such

a project, thus emphasizing widespread ownership. The group can be asked to rate the "urgency" of each item on a scale of 1 (low) to 5 (high), and to similarly rate the achievement from 1 (low) to 5 (high). The subtracted total can give participants a rough feel for the "achievement gap" which they can use "as is" as a measure of priority (translating higher numbers into priorities "high", "medium" and "low"). Or groups can use this information and then also consider feasibility: opportunities and costs.

The tasks of the facilitator in acknowledging, recording, reframing, summarizing, combining are not to be underestimated. This job belongs to individuals with excellent facilitation skills who can gain the trust of the group, and who can both trust and guide the group process. The matrices should be used at this point to draw attention to any areas that have not received consideration, in order to encourage a broad scope of intervention. It should also be used to allow everyone to see where each other fits into the big picture, and to appreciate one another's roles and responsibilities in a complex jigsaw puzzle.

A second set of breakout sessions can be used to review the strategies currently being pursued related to each sphere (or sector). Detailed questions can be asked of representatives in order to explore synergies, and ways to build on existing efforts. The group can identify gaps that need to be addressed and then work in even smaller groups of 2-5 people, spending about 30 minutes to explore synergies and make suggestions, and then summarize for the breakout group and prepared to report back to the large group. At this point, an archive of "old strategies" might also be kept on hand both to see "where we've come from" and for good ideas to be resurrected as needed. This is an opportunity for good ideas to get a hearing, and for weaker ideas to benefit from a spotlight. Some of the activities may be seeking resource allocation from potential donors, others may be activities which stakeholders can volunteer to take on and integrate into existing work plans to meet widely perceived needs. Existing and new activities alike will benefit from the synergies, enthusiasm, information-sharing and collaborative ideas that emerge during the group process.

Final sessions should form ongoing collaborative committees or workgroups and provide a wrap-up and acknowledgement of all participants.

STEP FIVE: COMMUNICATION AND PERIODIC REVIEW
It would be ideal to be able to provide staff (perhaps on a rotating basis) to follow up with a monthly or bi-monthly newsletter to be distributed to stakeholders in order to continue to share information, perspectives, and details of activities, and to share emerging practices. A similar large gathering every year to review cumulative accomplishments compare these to the baseline, continue to discuss opportunities, threats and priorities and find synergies would be a useful way to continue to involve stakeholders in the long-term mitigation process.

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Note: The Risk Reduction Framework is an iterative working tool in it's initial stages of application. We welcome your feedback, input, ideas, modifications, and experiences in practice. E-mail: petal@geohaz.com

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APPENDIX I: TABLES

Table 1: Stakeholders in Disaster Risk Reduction
Table 2: Scope of Urban Disaster Mitigation Activities

APPENDIX II: TEMPLATES
1. Annual Risk Reduction Report Template
2. Risk Reduction Strategies - Listing Form
3. Risk Reduction Rolling Plan Summary Matrix

Table 1: Stakeholders in Disaster Risk Reduction

STAKEHOLDERS	
Public Agencies: Emergency Management, Civil Defense Architecture / Construction / Planning Health Education Public Works Public Safety: Fire, Police, Ambulance Scientific Research, Universities	**Academic & Scientific Institutions:** Geological, geophysical, seismology Earthquake engineering, civil engineering, structural engineering Architecture Fire protection Nuclear and biological/ chemical haz mat
Civilian Orgs: **(NGO, CBO, Professional)** Health, education, youth, women, search & rescue, environment Business associations, chambers of trade/industry Foreign businesses Professional assoc of architects / engineers Trade associations Trade unions. Neighborhood associations	**International Agencies (IGOs)** Foreign govt. aid organizations Intergovernmental aid organizations Humanitarian relief ngos Development ngos (health, education, environment) Sister cities Professional and academic organizations
Businesses: Banks, lenders, insurance companies, construction companies	**Policy Makers:** Local and regional government officials National government representatives
Individuals: Building owners Business owners Teachers, school administrators, health & social service administrators, parents, children Public at large Scientists and academicians	**Opinion Makers & Mass Media:** Radio and television personalities, journalists and producers Newspaper and magazine journalists Celebrity / spokespeople

Table 2: Scope of Urban Disaster Mitigation Activities
Please note: this was written with an emphasis on earthquake risks. For floods, cyclones, hurricanes, volcanoes, wildfires etc. specific content should be reviewed and replaced

I. RISK ASSESSMENT and PLANNING (RAP)		
SMALL (micro)	**MEDIUM (meso):**	**LARGE (macro):**
Family Plan (incl. Exit routes, out-of-area contact, meeting place, message drop) Earthquake hazard hunt (non-structural measures) Individual & family awareness Loss-sharing awareness & Insurance Purchase Evacuation awareness Identification of micro-zone characteristics Land-use awareness Micro-tremor studies	Basic disaster awareness education Emergency & disaster planning Land-use enforcement Insurance sales Insurance purchase Building exit routes Building exit marking Evacuation plan & drills Business continuity School continuity Community resilience Inventory of community & maps Building inventory Bore hole inventory Neighborhood risk awareness	Scenario impact assessments Rapid response Early warning Land use policy Insurance policy Evacuation policy Communications planning Taxation policy Risk sharing policy GIS National Dis. Management Risk mapping Building inventory Micro-zonation studies Scenario impact assessments Regional risk awareness

II. PHYSICAL PROTECTION (PP)		
II. PHYSICAL PROTECTION (PP) STRUCTURES **A.1. Existing Structures**		
SMALL (micro):	**MEDIUM (meso):**	**LARGE (macro):**
Renter/buyer structural awareness Selective occupancy or purchase Building vulnerability assess Maintain and repair bldg Professional Retrofit bldg	Maintain and repair bldg Retrofit multi-family bldg Engineering & design education Construction education Building condemnation Structural awareness	Land use policies Earthquake engineering research Relocation of existing facilities Critical facilities retrofit Residential retrofit incentives & financing

	education Retrofit techniques and demo School & Hospital retrofit Public facilities retrofit	
II. A.2. New Structures		
SMALL (micro)	**MEDIUM (meso):**	**LARGE (macro):**
Architect/engineer knowledge Construction worker knowledge Code enforcer knowledge Non-engineered aseismic building practices Aseismic construction compliance	Building inspection Arch/Eng education Code enforcement education Construction worker education Aseismic construction. techniques Land-use enforcement Voluntary code compliance	Land use policies Construction standards & Building codes Professional licensing Contractor's licensing Location of critical facilities Property acquisition
II. B. Infrastructure		
SMALL (micro)	**MEDIUM (meso):**	**LARGE (macro):**
Land-use awareness Fire extinguisher	Local hazards identification Land-use enforcement Fire extinguisher sales Infrastructural stability Infrastructural repair and redundancies	Hazard assessment Land-use policy Fire fighting Infrastructure standards
II. C. Non-Structural		
SMALL (micro)	**MEDIUM (meso):**	**LARGE (macro):**
Fastening tall & heavy furniture, appliances Arranging furnishing & cupboards Securing heaters and water tanks Awareness of fire hazards Eliminating fire hazards	Securing critical facilities for continuity (hospitals etc) Securing schools Protecting workforce Securing fixed assets and facilities NSM tools availability NSM education	Non-structural mitigation policies
II. D. Environmental		
SMALL (micro)	**MEDIUM (meso):**	**LARGE (macro):**

Awareness of disaster-related environmental threats Environmental activism	Public information about environmental threats Control of adverse impacts on air, land, water, habitat Compliance with environmental protection policies Enforcement of environmental protection policies	Occupational health and safety policies Environmental protection policies

III. RESPONSE CAPACITY DEVELOPMENT		
III. A. Response Provisions		
SMALL (micro)	**MEDIUM (meso):**	**LARGE (macro):**
Water (4l./person x 3 days) & Food Flashlight & batteries Battery operated radio First aid kit Fire extinguishers Shelter / blankets Cooking supplies Clothing Cash Prescription medication	Water & Food Sat. telephones Medical supplies Fire-fighting equipment Tents & blankets Sanitation equipment Light SAR tools & equip. Storage Distribution Maintenance	Water Technical search equipment Heavy rescue equipment Debris removal equipment Distribution systems
III. B. Response Skills Development		
SMALL (micro)	**MEDIUM (meso):**	**LARGE (macro):**
Fire suppression skills First aid skills Drop, cover & hold drills Building exit drills Turning off utilities Wireless communication Psychological first aid Hazard assessment	Fire suppression Mass casualty triage Light search & rescue Emergency medical operations Temporary shelter-care Mass nutrition Rapid assessment training Hazard assessment Incident command systems Mobilization/organization of convergent responders	Fire fighting Professional USAR Response standards GIS Org. of med response Org. of shelter response Bldg Damage assess Incident command systems

APPENDIX II: TEMPLATES

1. ANNUAL RISK REDUCTION REPORT TEMPLATE

<u>**CITY OF**</u>
<u>**EARTHQUAKE SAFETY INITIATIVE**</u>
<u>**ROLLING RISK REDUCTION PLAN**</u>
<u>**20xx   -   20xx**</u>

I. BACKGROUND:

A. Description of Geographic, Social, Economic, Political and Cultural Environment
(2-3 pages)

B. Description of Known Natural Risks (1-3 pages)

II. Risk Reduction Strategic Planning Fundamentals
(for each of 6 spheres & subspheres of activity)

SPHERE OF ACTIVITY: _____

Sub-sphere: _____

A. RİSK REDUCTİON CONCERNS & GOALS MATRİX
(for each of 3 community levels: micro, meso, and macro)

Social Level: [ ] Micro   [ ] Meso   [ ] Macro

CONCERNS & GOALS (NORMS) *(fill in the appropriate full set of items below from a single cell in Table 2)*	Urgency 5-High 1 Low	Achievement (5 High 1 Low)	Achievement Gap: (Urgency - Achievement)	PRIORITY ASSIGNED (High, Medium or Low)

B. STRAGETIC PARAMETERS: (1 set for each "Sphere of Activity")

APPLICABLE LAWS & POLICIES (list)

RESPONSIBLE GOVERNMENT AGENCIES (list)

WEAKNESSES & THREATS (describe)

STRENGTHS & RESOURCES (describe)

STAKEHOLDERS & THEIR ROLES (list)

PREVIOUS STRATEGIES (list by name)

CURRENT STRATEGIES (list by name)

Template 2. RISK REDUCTION STRATEGIES - LISTING FORM

NAME OF STRATEGY:

SPHERE(S) OF ACTIVITY:
Sub-sphere:
Social Level(s): [ ] Micro   [ ] Meso   [ ] Macro

Lead Organization:
Contact Person:

Target Group(s):
Geographic Area Covered:
Time Frame:

Objectives:
Approach:
Last Year's Outcomes:
Next Year's Targets:

Template 3: RISK REDUCTION ROLLING PLAN SUMMARY MATRIX

		URBAN DISASTER MITIGATION - SPHERES OF ACTIVITY					
		RISK ASSESSMENT & PLANNING (RAP)	PHYSICAL PROTECTION (PP)				RESPO... CAPA... DEVELO... (RC... Response Provis...
			Existing & New Structures	Infra-Structural	Non-Structural	Environmental	
STRATEGIC PARAMETERS	CONCERNS & GOALS (Norms)						
	APPLICABLE LAWS & POLICIES						
	RESPONSIBLE GOVERNMENT AGENCIES						
	WEAKNESSES & THREATS						
	STRENGTHS & RESOURCES						
	STAKEHOLDERS & THEIR ROLES						
	STRATEGIES IN USE						
	STRATEGIES UNDER CONSIDERA-TION						

This form can used to create a large matrix on a wall, where all of the contents can be viewed simultaenously.