

Hazard Reduction and Response in Metropolitan Regions: An Interdisciplinary Model Earthquakes in Megacities Initiative (EMI)

Summary, Planning Meeting, Palacio de Minería,
Mexico City, D.F., July 12, 2002, 3:30 - 5:30 p.m.

Present: Ing. Cesar Buenrostro Hernandez, Ciudad de Mexico, D.F.; Fouad Bendimerad, EMI; Sergio Puente, El Colegio de Mexico, Mexico City; Eduardo Reinoso, UNAM, Mexico City; Jeannette Fernandez, EPN, Quito; Nury Bermudez, Municipalidad de Quito; Jorge Quezada, Mayor's Office, City of Los Angeles; Santiago Arumbula, Universidad de los Andes, Bogota; German Tapia, Municipalidad de Bogota; Louise Comfort, University of Pittsburgh and EMI.

Louise Comfort opened the meeting and outlined a brief agenda for the group discussion. The agenda included four items:

1. Purpose of UCIS/HPCC/EMI project to be conducted in conjunction with EMI participants;
2. Strategy: Methods for developing a program of research and instruction for hazard reduction in megacities
3. Tasks: Definition of specific tasks for each of the five sets of university researchers and city administrators engaged in planning for hazard reduction
4. Time schedule: Determination of a schedule for specification and preparation of research and instructional modules; dates for Pittsburgh conference; submission of proposals for applied research and professional education on hazard reduction in the participating cities.

The discussion is summarized briefly by agenda topic.

I. Purpose of UCIS/HPCC/EMI project.

Louise Comfort gave a brief explanation of the purpose and major objectives of the project on hazard reduction and response in megacities that is co-sponsored by the University of Pittsburgh and Earthquakes in Megacities Initiative (EMI). First, the project represents a productive collaboration between the Global Academic Partners (GAP) Program sponsored by the Center for International Studies, University of Pittsburgh; the High Performance Computing Center (HPCC) Initiative sponsored by the University of Pittsburgh; and EMI. The major purpose of EMI is to facilitate access to scientific information in reference to hazards by city officials engaged in planning actions to reduce hazards and improve response to extreme events for their populations. The major purpose of the GAP program is to initiate and support innovative programs in research and instruction in reference to actual policy problems among faculty of the University of Pittsburgh and international research institutions. The major purpose of the HPCC Program is to utilize the highspeed connectivity provided by the University of Pittsburgh's SuperComputer to support academic research and instruction in reference to innovative policy programs. These three purposes combine to create a powerful set of incentives and support for the design and implementation of a coordinated program of interdisciplinary, international research and professional instruction in hazard reduction and response in five megacities: Ciudad de Mexico, D.F.; Quito, Ecuador; Bogota, Colombia; Los Angeles, CA; and Kobe, Japan. The

first four cities comprise the Americas Cluster of EMI. Kobe, Japan represents a link to the East Asian Cluster of EMI. All five cities have significant exposure to seismic risk, but also to other hazards such as flooding, fire, technological and deliberately-caused hazards. The University of Pittsburgh and the community of practicing managers in Pittsburgh represent a connecting link of technical and organizational support to the international researchers and practitioners engaged in hazard reduction and response.

Second, the specific objectives of this interdisciplinary, international program are to identify a set of research and related instructional modules that are critical to hazard reduction and response in the respective megacities. The goal is to initiate a set of related research projects in reference to hazard reduction and response simultaneously at each of the affiliated research universities, and to share the findings from these related projects among the researchers and practitioners of all five megacities. The expectation is that shared research findings regarding problems of hazard reduction and response common to all five cities will increase the rate of learning and exchange of information among the cities and broaden the understanding of hazards and their consequences for the built and human environments of the participating cities. With sound scientific evidence and clearer understanding of the mechanisms of failure in both technical and organizational systems, cities would be able to manage risk of hazards more efficiently and effectively.

Research findings will also be incorporated into interdisciplinary instructional modules that may be offered at each of the participating universities to educate the next generation of managers in engineering, public health, public policy and administration, urban planning, operations management and other fields related to hazard reduction and response in city management. These instructional modules will be central to building a “culture of prevention” to support hazard reduction in the participating cities, and would become an important component of professional education at each of the participating universities.

After discussion and questions regarding these objectives, all participants at the meeting agreed to accept these objectives as valid for the group’s collaborative effort.

II and III. Strategy and Tasks for UCIS/HPCC/EMI Project

The strategy for achieving these objectives was outlined as follows:

1. Each set of city administrators and university researchers from the five respective cities would identify a subset of three problems related to hazard reduction and response that were especially urgent or significant for hazard reduction in their respective cities. The city administrators would likely identify the problems for study, while the university researchers would recommend the methods and requirements for conducting the study. The result would be a subset of problems that are both relevant to improving practice in hazard reduction and feasible in terms of current knowledge and experimental design. Each city team would order their list of three proposed research projects in terms of preferred priority. Each city team would submit their list of proposed research projects to all members of the group via e-mail by September 30, 2002. Each list would be accompanied by a two-page rationale for the significance of

the recommended projects and an estimated budget in terms of cost and personnel to carry out the project.

2. All members of the collaborating city teams would review all five sets of projects (5 x 3 = 15) to determine if there were points for possible collaboration among the city teams, points of overlap or redundancy, or points that had been omitted in a systematic review of hazard exposure for megacities. From the list of 15 proposed research projects, the group would develop a smaller list of 5 projects, one from each city, that would serve as the beginning program of research on hazard reduction for the group. Each city team would submit its recommendation for the mix of 5 research projects for the group, with an accompanying rationale for its selection. This recommendation would be submitted by October 30, 2002, and would be reviewed and discussed at the EMI Board meeting in Shanghai, China, on November 3, 2002. At that meeting, the representatives of the five participating cities would confirm the final list of five research projects that would focus on hazard reduction for the set of megacities. This list of five projects would serve as the organizing focus for an international conference to be held at the University of Pittsburgh on March 8-11, 2003. (These dates are pending confirmation from University administrators that the necessary facilities are available on those dates. Back-up dates would be March 20-22, 2003).
3. Each city team would also identify an instructional module for university education that would be relevant to understanding the basic conditions underlying the research problem selected for hazard reduction. The university faculty members of the team would be responsible for outlining the content and methods for the instructional module.
4. The university researchers will present their city projects at an international research conference at the University of Pittsburgh. In making their presentations, the researchers would outline a carefully developed research design, prepared in accordance with the professional standards used by the US National Science Foundation. These research modules will serve as the basis for a larger grant proposal that will be submitted to several funding organizations. Representatives of selected funding organizations, such as the Ford Foundation, the Sloan Foundation, and the US Agency for International Development, will be invited to the Pittsburgh conference to hear the presentations.

City administrators will participate in the conference proceedings live via highspeed Internet2 connection, using the Abilene network and facilities and support from the University of Pittsburgh SuperComputing Center, if the appropriate arrangements can be made. This capacity will enable interactive participation and dialogue between the practicing managers and the researchers from all five cities. The conference will also be viewed live on Webcast to a global audience.

5. The Pittsburgh conference will also provide as an opportunity to review the set of

proposed research modules and to discuss their integration into a coherent program of research on hazard reduction for the five participating megacities. The set of research and instructional modules will serve as the basis for a major research proposal to be submitted to the funding organizations that will also be invited to attend the conference. The objective of the conference will be to match the identified research and instructional modules with appropriate funding sources to initiate a major program in hazard reduction for the five megacities.

6. The proceedings of the Pittsburgh conference will be made available on the IISIS Web site at the University of Pittsburgh, with links to the Web sites of the participating research centers and agencies. A set of proposals for funding this initiative on hazard reduction and response will be submitted to the respective funding organizations by April 15, 2003.

IV. Time Schedule: UCIS/HPCC/EMI Project

August 1 - September 29, 2002: Identification of a subset of three potential research projects, with accompanying instructional modules, that are critical to hazard reduction by each of the five city teams: Mexico City; Bogota; Quito; Los Angeles and Kobe, Japan.

September 30, 2002: Submission of identified list of research and instructional modules to all members of the project group. L. Comfort will collect and organize the list by city, and recirculate.

October 1 - 29, 2002: Review and discussion of the set of 15 research and instructional modules to identify a coherent list of five projects, one for each city, that would serve as a beginning program of hazard reduction with the collaborative exchange of findings and dialogue among the participating cities and universities.

October 30, 2002: Submission of a recommended list of 5 coherent projects, one for each city, that would serve as the organizing focus for the Pittsburgh Conference in March, 2003, and the basis for proposals to funding organizations to support this research over a multi-year period.

February 15, 2002: Submission of a detailed research design by each city team, supported by the appropriate literature and case examples, for presentation at the Pittsburgh conference. These designs would be organized in conference packet that would be made available to conference participants for their review and discussion at the March conference.

March 8-11, 2003: Hazard reduction workshop at the University of Pittsburgh. The research designs would be presented at the Pittsburgh conference by the researchers, with live commentary via Internet2, from the city administrators and representatives from the

potential funding organizations. Comments from practicing administrators and representatives of the funding organizations would be incorporated into the revised design of the research and instructional modules. The modules would serve as the basis for a major research proposal submitted to several funding organizations to secure multi-year funding for the projects.

April 15, 2003: Research proposals will be submitted to the relevant funding organizations to support a systematic program of hazard reduction for the five participating cities.

June 30, 2003: A report documenting program activities and achievements will be submitted to the University Center for International Studies, University of Pittsburgh; the High Performance Computing Center, University of Pittsburgh, and Earthquakes in Megacities, with the partner institutions for the five cities included in this project. This report may be posted on the EMI Web site, with links to the Web sites of all participating institutions.

Prepared by Louise K. Comfort, July 22, 2002.