

Internet Map Viewers

To assist city planners, public safety officials, and educators to understand the *spatial context in which multiple hazards impact urban environments*, PDC and EMI are partnering to implement GIS-based “Internet Map Viewers” for various megacities in the EMI network. A prototype for the entire Philippines’ Metro Manila area—an urban center of 10 million people comprising 13 cities and 4 municipalities—has been already implemented for three earthquake scenarios. Other hazards will be incorporated into the Metro Manila Map Viewer in the future.

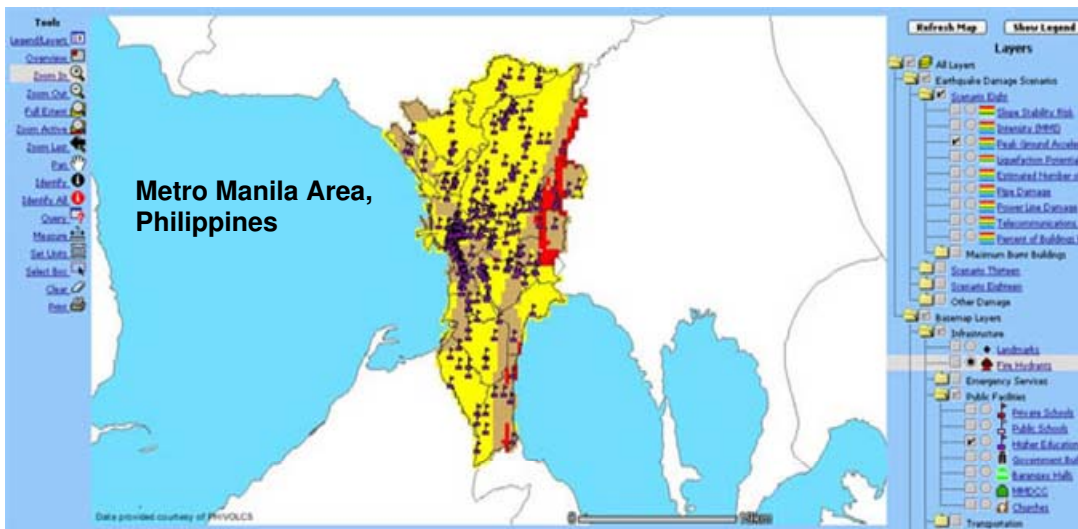
This easy-to-use, interactive tool allows users to view useful information and maps from datasets such as earthquake hazards and impacts, transportation, public facilities, emergency services, elevation, land use/zoning and high resolution imagery. The only requirement to view this information is an Internet browser. Map Viewers are developed at PDC’s Maui headquarters, with the ultimate goal of transferring local capability to each client.

Through the Internet Map Viewer, educators, scientists, decision makers, and community members currently have instant access to one of the world’s largest urban data sets. These stakeholders are currently using the Map Viewer to learn about hazards and their possible impacts as the basis for mainstreaming risk reduction activities into city planning processes.

To access the Metro Manila Map Viewer visit www.pdc.org/metromanila
 Username: mmmv
 Password: mmmv123
 or contact bossse@pdc.org

The Pacific Disaster Center provides applied information research and analysis support for the development of effective policies, institutions, programs, and information products for the disaster management and humanitarian assistance in communities of the Asia Pacific region and beyond. www.pdc.org

The Earthquakes and Megacities Initiative is a not-for-profit international scientific organization dedicated to the reduction of earthquake and other hazard risk to complex urban areas (i.e., megacities) in developing countries, by accelerating the delivery of knowledge and technology to the end users and by working directly with megacities in building capacity and influencing policy. www.earthquakesandmegacities.org



The Metro Manila Map Viewer displaying an example of the Peak Ground Acceleration for a modeled earthquake scenario. Higher education facilities are displayed. Users can select a data set from the menu (right column) to overlay and to view spatial relationships of interest. The navigation tools (left column) allow users to manipulate views and analyze risk in GIS format. (Data courtesy of PHIVOLCS)

Other Partners and Sponsors:



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Risk Communication Tools

PDC and EMI develop risk reduction tools for Megacities

With the ever-present danger of a large earthquake devastating a “megacity” in the international community, it is critical to conduct disaster risk reduction activities *before* a calamity strikes. Preemptive actions can save lives and preserve economic and social development progress.

To address this pressing need, the Pacific Disaster Center (PDC) and Earthquakes and Megacities Initiative (EMI) have jointly developed and endorsed three innovative “risk communication tools” in collaboration with national and international partners.

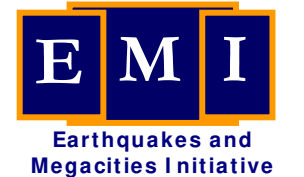
These tools facilitate information sharing and promote city stakeholder participation and “ownership transfer.” They also foster a better understanding of the linkages between disaster risk and development progress between local authorities, practitioners, researchers, and civil society.

Each of the examples presented below are being tested and implemented in several megacities through the EMI’s *Cross-Cutting Capacity Development (3cd) Program*—a long term, interdisciplinary program that assists megacity governments to implement sound disaster risk-management practices and policies.



- **Megacities Disaster Risk Management Knowledge Base:** To increase the understanding of disaster risk and information sharing among members of the international user community, 3cd program experts have worked closely with the PDC to develop a “Disaster Risk Management Knowledge Base” for megacities. The Knowledge Base has been created with robust data access and data mining capabilities, and is available via the Internet. www.pdc.org/emi
- **Megacity Indicators System:** Based on the Inter-American Development Bank-Institute of Environmental Studies (IDEA) Indicators methodology (which has been developed by the National University of Colombia-Manzales), a prototype model for a “Megacity Indicators System” is currently being tested in Metro Manila. This methodology seeks to measure disaster risk management performance and urban seismic risk reduction progress in megacities. www.earthquakesandmegacities.org or www.pdc.org/emi
- **Internet Map Viewers:** Interactive Geographic Information Systems (GIS)-based “Map Viewers” allow city planners, government officials, and a wide range of stakeholders to visualize potential threats to populations and infrastructure. The Metropolitan Manila Map Viewer is the first application developed for a megacity in the EMI network. This tool offers baseline infrastructure information as well as modeled earthquake scenarios that support disaster-planning processes.

- Decision and Policy Support
- Institutional Capacity Development
- Risk and Vulnerability
- Security and Sustainability



“...Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation”

--UN-ISDR Hyogo Framework of Action (Action #1)

PDC, EMI, and its partners currently fund interns in many of megacities to collect information and to improve the content and quality of the Knowledge Base.

Contributions to the Knowledge Base from researchers, practitioners, city planners, and community-based organizations are welcome.

To contribute, contact J. Fernandez or J. Buika. Email: emi@pdc.org

To learn more about the 3cd Program see www.pdc.org/emi, or www.earthquakesandmegacities.org

For more information on the Megacity Indicators System contact odcardona@hotmail.com or khalidb@pacbell.net

Megacity Disaster Risk Management Knowledge Base

The Megacity Disaster Risk Management Knowledge Base aims to share information and sound practices for comprehensive disaster risk assessment, reduction, and management activities. This tool documents, organizes, and illustrates disaster risk management sound practices and systems that are currently in place in many of the world's most complex and disaster-prone megacities. Conceived to be a user-friendly "e-learning tool," the Knowledge Base helps to extend the use of sound practices and methods at a global scale to, in turn, support the development of effective risk reduction and mitigation options at the megacity level.

Knowledge Base Features

- Download capability for discussion papers, fieldtrip reports, and methodological proposals into a web-based "Disaster Risk Management Library."
- Search ability for every document in the database, which can be classified by city, category, hazard type, or key word.
- Access to a network of city planners, researchers, emergency managers, and practitioners involved in risk reduction and management in 20 cities worldwide.

Documents Currently Available

- Disaster Risk Management "City Profiles" from twelve megacities in the Asia, Americas, and Euro-Mediterranean region.
- Forty disaster risk management "Sound Practices."
- Publications, discussion papers, and fieldtrip reports.
- A contact directory for city officials and researchers from 20 cities in the EMI network.

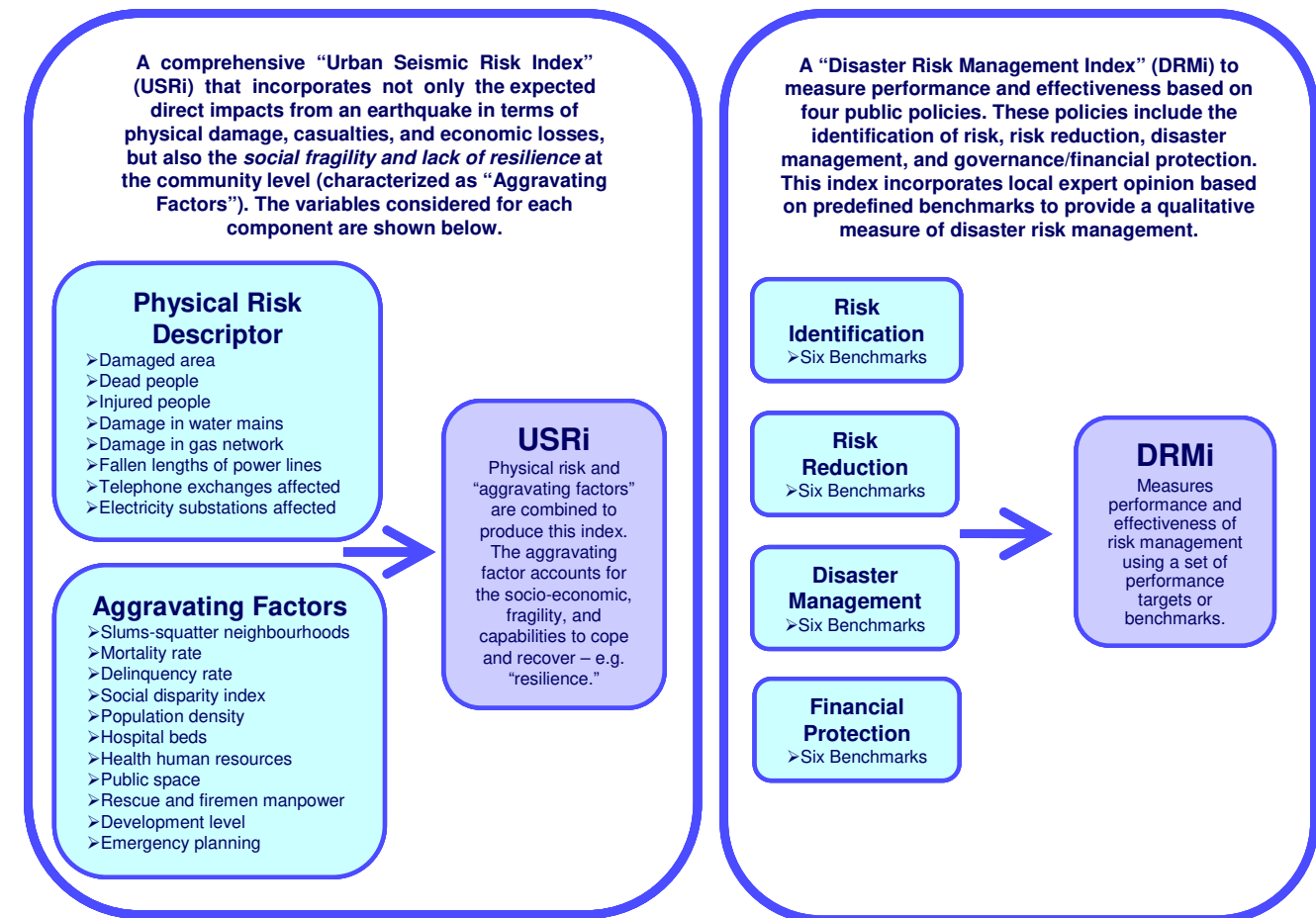


The highlighted cities are all contributing to the Megacities Disaster Risk Management Knowledge Base.

Megacity Indicators System

To date, there has not been a set of indicators that measures disaster risk management performance or urban seismic risk reduction for megacities. To address this gap, a *Megacity Indicators System* (MIS) is being designed and adapted based on the methodology developed by the Inter-American Development Bank's Indicators Program (through studies undertaken by the Institute of Environmental Studies (IDEA) at the National University of Colombia-Manizales (<http://idea.unalmz.edu.co>)). This methodology has already been tested at the national level in 13 countries in the Americas.

In this on-going initial investigation, two sets of indices have been determined to be most suitable:



Implementation in the Philippines' Metro Manila Area

Megacities Indicators Systems (MIS) methodology is being pilot tested in the Philippines' Metro Manila area, and will be extended within the EMI megacities network. MIS is also used as a tool in Metro Manila to communicate risk and promote a strategy of disaster risk reduction and disaster management. The MIS tool will help build ownership and assist in policy development and decision making, and will also provide a system for monitoring the effectiveness of specific risk reduction options. Many influential organizations are utilizing disaster risk management indicators to develop and establish their own risk reduction policies.