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## 3cd Program

# *Disaster Risk Management Master Plan (DRMMP) Implementation in Metropolitan Manila*

In partnership with



**MMDA – PHIVOLCS and  
Quezon, Makati and Marikina Cities**

**Fifth Field Trip Report**

May 21-26, 2006

# *DRMMP Implementation in Metropolitan Manila*

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**3cd Program  
 DRMMP Implementation in Metropolitan Manila  
 5th Field Trip and Workshops, May 21-26, 2006  
 AGENDA**

Date	Sunday, May 21	Monday, May 22	Tuesday May 23	Thursday, May 25	Friday, May 26
Title	Preparatory Meeting	"First Seismic Risk Reduction and Risk Management Indicators Workshop in Metro Manila"	"Mainstreaming Disaster Risk Reduction in Land Use Planning: Implementing the DRMMP in Metro Manila"	"MMEIRS Map Viewer User's Training"	"MMEIRS Map Viewer User's Training"
Co-Sponsors	PDC	EMI, PHIVOLCS (will provide the venue), MMDA, PDC, Kobe University, UNDP, ProVention Consortium	EMI, PHIVOLCS, MMDA, PDC, Kobe University, UNDP, ProVention Consortium, Quezon City (will provide the food)	EMI, PHIVOLCS, MMDA, PDC, Kobe University, UNDP, ProVention Consortium, NDCP (will provide the venue)	EMI, PHIVOLCS, MMDA, PDC, Kobe University, UNDP, ProVention Consortium, NDCP (will provide the venue)
Activity	Planning session and organization of the whole week activities	Risk Indicators WS	Land Use WS	Map Viewer Training	Map Viewer Training
Duration	9:00 – 4:00	9:00 – 4:00	8:30 – 4:00	8:00 - 12:00 & 1:00 - 5:00	8:00 - 12:00 & 1:00 - 5:00
Venue	Makati Shangri-la Hotel Business Center	Auditorium, PHIVOLCS	Auditorium, PHIVOLCS	ICT Laboratory, 3rd Floor, NDCP	ICT Laboratory, 3rd Floor, NDCP
# Participants	10	51	60	44	50

**Special event: On May 25, 2006, EMI has been invited to attend the Metro Manila Disaster Coordination Council regular session to present current status of the 3cd Program and discuss the role of the MMDCC in the DRMMP implementation process.**

3cd Program  
Disaster Risk Management Master Plan (DRMMP)  
Implementation in Metropolitan Manila  
5th Field trip Report, May 21-26,2006

**Summary**

**Background**

Four major steps were taken in Metro Manila during the week of May 21 to 26, 2006, that will considerably advance the process of implementation of a comprehensive Disaster Risk Management Master Plan (DRMMP) based on 6 areas of cooperation agreed upon between the Metro Manila Development Authority, MMDA, and the Earthquakes and Megacities Initiative, EMI.

- The first Metro Manila seismic risk reduction and management indicators workshop
- The second seminar-workshop addressed to planning officers of the 17 Local Government Units comprising Metro Manila on the incorporation of risk reduction actions within regular land use planning activities.
- The first Metro Manila Map Viewer Training Module developed by the Pacific Disaster Center in partnership with PHIVOLCS on the capabilities of the Metro Manila Map Viewer.
- The 3cd Program presentation to the technical working group of the Metro Manila Disaster Coordination Council, which constitutes a key event in the course of building ownership and boosting political support for the overall risk reduction and management process in Metro Manila.

These events were well received by the local institutions and promoted a wide participation of more than 200 city stakeholders in the four events.

**Conclusions based on these events**

1. The development and use of a system of seismic risk reduction and management indicators was enthusiastically received in Metro Manila. The Metropolitan Manila Development Authority (MMDA), through its Technical Working Group, and the three pilot cities of Makati, Marikina and Quezon are eager to use the set of indicators system promoted by EMI and its partners. Improved procedures for a smooth implementation need to be discussed and implemented by the MIS technical group. For details see Indicators workshop proceedings on page 3.
2. The need to have a multi-hazard approach in the integration of risk reduction in land use planning was raised. Though flood risk was cited as an urgent concern in Metro Manila, high intensity but low frequency risks such as earthquakes need to be managed at the same time.
3. The importance of communicating risks and the means of relaying the message to a non-technical audience was also stressed. High tech methods such as GIS are useful but other risk communication means are needed when dealing with the grassroots communities. The necessity of participatory methods in land use

- planning and disaster risk reduction was likewise pointed out as risk management is considered to be a shared responsibility.
4. A first training and capacity building exercise for the use of the Metro Manila Map Viewer was successfully conducted by PDC. The next step includes the implementation of the Map Viewer locally. PDC will continue to work with the EMI Secretariat, PHIVOLCS, and MMDA to examine best options to transition this system to a local server with hardware, software, and support personal to manage the Map Viewer locally.
  5. An Implementation Plan outlining options and estimated costs will be presented to all parties by PDC. Until this implementation takes place, PDC will maintain the Map Viewer on its Maui computer system until December 15, 2006.
  6. EMI, PDC and the Local Investigator will develop a draft strategy for application and enhancement of the Map Viewer technology in Metro Manila relative to its Disaster Risk Management Master Plan.

## Next Steps

Action items have been pointed out in each one of the four subsequent sections. Major agreements related to the 3cd Program in Metro Manila include the following:

**Follow up with the reorganization and strengthening of the 6 Focus Groups in Metro Manila. FG3 and FG4.-** Focus Group 3 that looks into training needs assessment for disaster risk management and FG4 that looks into options for cooperation with the private sector and the organized community need to be given a boost, through refocusing on more a concrete action plan. **FG5** deals with Legal and Institutional arrangements. A new group leader needs to be appointed from within this very active core group: Dr. Gaudioso Sosmenia, Dr. Asteya Santiago, Dr. Clarita Carlos and Atty. Violeta Seva, Dr. Neil Britton, former leader who is currently working for the Asian Development Bank based in Manila, has kindly agreed to continue to support this initiative by participating in the upcoming meetings. The EMI Secretariat will follow on this process. **FG6** needs to be re-organized and the best option suggested was to anchor it to the MMDA technical working group. EMI Secretariat will follow on this process and will look for means to bring the FGs activities into a workshop tailored to the needs of the MMDCC technical group.

**Land use and planning group.** Focus group 2 has been very active with regular meetings hosted by the cities; in the future, members of this group are expected to meet on a monthly basis. This group will consider the possibility of having two subgroups, one to deal with policy issues and the second one to look into enforcement options. Advisor to this group, Ms. Laurie Johnson will provide reference documents to assist this group. It was also suggested that FG2 should build bridges with the environmental planning groups in the cities to learn from their experience.

**Next Field trip to Metro Manila.** The sixth field trip and workshops in Metro Manila have been tentatively scheduled for mid October 2006.

## Proceedings

### First Seismic Risk Reduction and Risk Management Indicators Workshop in Metro Manila

May 22, 2006

PHIVOLCS Auditorium, C.P. Garcia Ave. Diliman, Quezon City

#### Introduction

In the context of the 3cd Program, EMI is devising several risk communication and risk reduction monitoring tools. One of the most promising is the use of a “Megacities Indicators System (MIS)”. Together with its partners at the National University of Colombia, Manizales, International Center of Numerical Methods in Engineering (CIMNE) of the Technical University of Catalonia, and the Pacific Disaster Center (PDC), EMI has recently started a new project to investigate, develop and pilot test a Megacities Indicators System<sup>1</sup>.

The main purpose of this project is to propose a strategy to promote disaster risk reduction in the megacities by using indicators to: 1) better understand the components of disaster risk management, and 2) build ownership within stakeholders and assist in policy, decision-making and monitoring the effectiveness of specific risk reduction options. Two composite indices are proposed to be used in this initial phase, the Urban Seismic Risk index (USRi) and the Disaster Risk Management index (DRMi). For details see <http://www.pdc.org/emi/emiwhatsnew.html> .

Metro Manila would become the second city in the world to test the methodology through a rigorous procedure of data collection, documentation of the implementation process and realistic evaluation of the theoretical results vs the reality, based on the perception on local experts in a wide range of risk reduction areas.

Exploring opportunities to extend the methodology globally in order to obtain an understanding of the relative levels of disaster risk and the performance of risk management to megacities from natural disasters is a medium term objective of this project.

#### Agenda

On March 14, 2006, the indicators concept and its methodological approach were introduced to a group of Metro Manila stakeholders. Preliminary data collection through a set of standardized forms was also carried out. On May 22, 2006, the participants in the indicators workshop were invited to hear from one of the authors of the methodology, Ms. Liliana Carreño, from the University of Catalonia, on details of the methodological approach and preliminary results of the Disaster Risk Management Index (DRMi) for the entire Metro Manila region.

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<sup>1</sup> This project is partially funded by UNDP and ProVention Consortium under a strategic cooperative program for megacities disaster risk reduction.

The opportunity was taken to organize three separate groups with experts from Quezon, Makati and Marikina cities to try and evaluate independently risk reduction and management efforts in each one of these cities over the last 10 to 15 years. Each one of the groups provided valuable information to construct the DRMi for its cities, but more importantly, attendees got engaged in valuable discussions around the four policies proposed by the methodology to measure progress in risk management. Also, the benchmarks or level of development in specific indicators that the method proposed were considered and discussed in light of the local culture, organization and availability of resources.

A fourth group of delegates, encompassing an inter-institutional and multidisciplinary number of representatives, was encouraged to look into the components of the Urban Seismic Risk index (USRi). It is important to keep in mind that the USRi has two major pieces: the one addressing the direct possible impact of the earthquake in the city, which can be estimated through an earthquake seismic scenario; and those social, economic and lack of resilience conditions of the impacted community, that can contribute to aggravate the disaster-coping capacity of the cities. Members of this group were asked to focus on these conditions in each one of the 17 cities that integrate Metro Manila. In case the information was not available, they were also asked to think about a different variable that could reflect a similar condition to the one being considered.

## Issues

The notion of an indicators system to monitor and communicate seismic risk reduction and disaster risk management efforts at the city level raised the interest of the participants in the workshop. We all could enjoy an enthusiastic discussion among participants, especially during the small groups exercise.

As any other new concept or approach, the whole process of implementation and construction of a system of indicators raises concerns and expectations that are worth looking at, especially if this is a pilot application and it is expected to widely disseminate the use of the methodology within the EMI network of cities. Major issues raised relate to:

- 1. The need of a careful customization and adaptation of the methodology to the environment where it is going to be implemented.** The implementation team with the advice of a small local core group needs to go over the methodology and decide on the best strategy to be used in the city of interest. Who are the actors that need to be invited, How the local focus group will be empowered with the new methodology; What kind of activities need to be organized i.e. workshops, seminars, technical presentations, How to get the data, how to carry out the consultations to understand relative importance of the variables, etc.
- 2. The need to review the language used in the technical documents.** Issues related to the translation of the documents, forms, questionnaires and other useful material from Spanish to English need to be carefully reviewed in order to facilitate a better comprehension. Also finding a way to produce more friendly formats should be a part of the review process.
- 3. The need of a detailed review of the availability and standardized definition of the variables or sub-indicators used.** This is particularly relevant in the

process; the implementation team should make sure that every participant is handling the same concepts and has the same understanding of the variables being investigated.

4. **Need to review the benchmarks provided in the DRMi.** Some of the participants felt that the standards proposed were a little bit too high given the prevalent conditions in Metro Manila cities. For example the city of Marikina is recognized as one of the most engaged in risk reduction, nevertheless, when qualifying their efforts, they found themselves very low on the scale.
5. **Need of a core of researchers and practitioners to follow up the process.** A small group of the PIT needs to follow the process and advise on a regular basis. It is recommended to have the active participation of at least one member of the Barcelona University Team, one member of the EMI Secretariat, the Local Investigator and one EMI member for the general MIS project coordination.

## Concluding remarks

The Metropolitan Manila Development Authority, through its Technical Working Group, and the three pilot cities are eager to use the set of indicators system promoted by EMI and its partners. Improved procedures for a smooth implementation need to be discussed and implemented by the MIS technical group.

## Next Steps

1. Antonio Fernandez, EMI Principal Scientist, has been designated as the point of contact for the whole MIS implementation process in Metro Manila. Issues related to data collection and internal coordination will be handled by Dr. Fernandez.
2. Liliana Carreño will provide a standard definition of the variables being used in the methodology, in Spanish. They will be translated and incorporate standardized definitions frequently used in the Philippines for better understanding and to ease the data collection process.
3. Marqueza Reyes, EMI Research Associate, will coordinate the digitalization process of the new questionnaires filled out by the participants in the workshop to be submitted to Liliana so she can re-evaluate them and run the model once again, particularly the USRi for Metro Manila and the DRMi for the three pilot cities.
4. Ramon Santiago from MMDA and Renato Solidum, 3cd Program Local Investigator, will promote the integration of a core group within the MMDA Technical Working Group, which will be encouraged to understand, utilize and assist in the implementation of the MIS as a risk communication and monitoring tool.
5. The Davos/Geneva Conference at the end of August/06, where some of the members of the different participating groups dealing with the implementation of the MIS in Metro Manila will be present, will be the opportunity for a third meeting of the technical MIS group to evaluate the process and accomplishments.
6. Jeannette Fernandez will act as facilitator among the different parties involved in the MIS project.

Prepared by J. Fernandez, EMI/PDC

## **Proceedings**

### **Mainstreaming Disaster Risk Reduction in Land Use Planning Implementing the DRMMP in Metro Manila**

8:30 a.m. – 4:00 p.m., May 23, 2006  
Phivolcs Auditorium, Diliman, Quezon City

#### **Introduction**

More than 60 representatives coming from the 13 cities and municipalities of Metro Manila, national government agencies, and civil society were warmly welcomed by Dr. Renato Solidum, Jr., Director of the Philippine Institute of Volcanology and Seismology (PHIVOLCS), to the Seminar-Workshop on Mainstreaming Disaster Risk Reduction in Land Use Planning on 23 May 2006 at the Phivolcs Auditorium.

This Seminar-Workshop is the second activity especially organized to actively engage local land use planners in the process of mainstreaming disaster risk reduction in their system and practice of comprehensive land use planning. Risk-sensitive land use planning is a vital cog in the successful implementation of Metro Manila's Disaster Risk Management Master Plan (DRMMP).

The seminar-workshop held on 5 December 2005, the first of its kind in the country, focused on the practical applications of land use and urban planning tools and techniques to reduce the risk of natural disasters and mitigate their possible negative impacts. It also aimed to raise the participants' level of awareness and understanding of disaster risk management and their instrumental role in promoting a culture of disaster resilience in local governance by integrating risk factors in the comprehensive land use planning process.

This Seminar-Workshop was co-sponsored by Quezon City along with EMI's partner institutions: PHIVOLCS, Pacific Disaster Center, ProVention Consortium, and the United Nations Development Program (UNDP). Mr. Hossein Kalali graced the occasion as observer from the UNDP Bureau of Crisis Prevention and Recovery (BCPR) in Geneva.

#### **Plenary Session**

Prof. Jeannette Fernandez started off the plenary with her update on EMI's 3rd Program in Metro Manila, specifically on the status of the ongoing "Implementation of the Disaster Risk Management Master Plan (DRMMP) of Metro Manila". She discussed EMI's model of mainstreaming disaster risk management (DRM) in all functions of government, the partnership structure required to implement the DRMMP, and the key action items of the DRMMP. She also highlighted the need for mainstreaming tools for which EMI, together with Pacific Disaster Center (PDC), developed internet-based tools such as the Metro Manila Map Viewer ([www.pdc.org/metromanila](http://www.pdc.org/metromanila)) and the Megacities Disaster Risk Management Knowledge Base ([www.pdc.org/emi](http://www.pdc.org/emi)).

Prof. Fernandez also mentioned the Megacity Indicators System (MIS) project of EMI for which Metro Manila has been chosen to be the pilot megacity for this endeavor and the program to mainstream DRR in land use planning through seminars and workshops, development of eLearning modules, and promotion of exchange among LGUs and regional and national government organizations. Lastly, she emphasized the importance of the engagement and commitment of local stakeholder groups and EMI's technical and managerial contributions to facilitate the implementation of the DRMMP as key in sustaining the gains made in institutional building and capacity enhancement towards a safer Metro Manila.

Afterwards, Dr. Marqueza Reyes presented a progress report on the mainstreaming process in land use planning with her presentation on the "Strategy for Mainstreaming Disaster Risk Reduction in Land Use Planning, the 3CD Experience in Metro Manila." She discussed the mainstreaming strategy of building partnerships through the use of focus groups in Metro Manila. Zeroing in on Focus Group 2 (FG2) which tackles the theme on land use planning and DRR, Dr. Reyes described the composition, characteristics, and activities of FG2 as well as its role in the full integration of DRR in the land use planning machinery of LGUs. She maintained that the power and system of land use planning as standard practice of LGUs logically lend planning as a process where DRR can be mainstreamed and institutionalized in local government.

Highlighting the need of the land use planning community for tools that will enable them to integrate DRR in land use planning, Dr. Reyes reported that a web-based training course on risk-sensitive land use planning was in its development stage, which targets the local planning and development coordinators as participants, among others. Seminar-workshops such as this one are also a continuing activity of this component of 3CD. She also mentioned the possible collaboration with the Housing and Land Use Regulatory Board (HLURB) on the production of guidelines on integrating risk factors in the land use planning, an offshoot of the focus group discussions of FG2. Other priority activities of FG2 are identifying further areas of cross-organizational collaboration, expansion of membership base, and transformation of FG2 to become the mechanism for sustainability and local ownership.

### **Key Presentation**

The participants benefited from the special participation of Ms. Laurie Johnson, AICP from San Francisco, California. Ms. Johnson spoke about "Integrating Risk Management in Land Use Planning." She outlined the risk management process from identifying and quantifying risks and managing and implementing risk management decisions to monitoring risk management performance. She explained three risk factors: hazards, exposure and vulnerability citing the earthquake risk profile of Metro Manila in terms of earthquake generators that threaten the metropolis, its building inventory and distribution, and physical vulnerability.

Ms. Johnson likewise emphasized four approaches in making risk management decisions, namely: avoid or eliminate risk by removing a risk trigger, reduce or mitigate risk by changing the characteristics of exposed elements, share or transfer risk by shifting the risk-bearing responsibility to another party, and retain risk by funding potential losses with own resources. Finding the best solution inevitably rests on the decision maker's circumstances, values and priorities.

Two case studies, Berkeley, California and New Orleans, Louisiana, were presented to illustrate how disaster risk management can be integrated in land use planning. In Berkeley, a Local Hazard Mitigation Plan was adopted in 2004 due to earthquake risk and added as appendix to the General Plan (land use, housing, open space, circulation, etc.) of 2003. In the aftermath of Hurricane Katrina, New Orleans is facing huge recovery costs. Ms. Johnson therefore emphasized the need of New Orleans to holistically manage its flood risk by comprehensively going through the steps of disaster risk management.

Finally, Ms. Johnson concluded that many risk management tools are consistent with local planning and implementation procedures as both have pre- and post-disaster strategies and both consider tools for existing and new development.

### **Small Group Workshop**

The participants were clustered into four groups: Manila Bay Area, Metro Manila North, Metro Manila South, and Metro Manila East. The small group workshop was divided into two parts. Many participants were the local planning and development coordinators and staff of 13 LGUs in Metro Manila, to wit: Manila, Navotas, Quezon, Valenzuela, San Juan, Mandaluyong, Makati, Pateros, Paranaque, Marikina, and others; representatives from national government agencies such as the HLURB, PHIVOLCS, Department of Public Works and Highways (DPWH) and National Economic and Development Authority (NEDA); and from the research, academic and professional community, Manila Observatory, University of the Philippines School of Urban and Regional Planning, and Philippine Institute of Environmental Planners (PIEP).

The first part of the workshop called for the participants to assess the current state of integration of DRR in six key areas which their office, the local planning and development office or LPDO, performs as part of their regular functions. These are policy, strategy, land use/geographical planning, project cycle management, external relations, and institutional capacity. This activity would provide insights into the extent and level of integration of DRR in the activities of LPDOs of the various cities and municipalities in Metro Manila. The results of this survey using Tearfund's assessment tool are expected to round out the capacity self-assessment conducted among the local planning and development coordinators and the results of the 5 December 2006 workshop where local planners and their staff identified constraints and institutional needs to mainstreaming DRR in their land use planning function.

The second part was a practical exercise on determining which planning tools, methods and techniques already familiar to planners could be applied in specific risk situations in their respective cities. Maps (e.g. PGA distribution, MMI distribution, Building Damage, Casualty and Injury Distribution using Scenario 8) and key information culled from the Metro Manila Earthquake Impact Reduction Study (MMEIRS) were provided to the 13 participating LGUs. A workshop template was used by the participants to guide discussions with city colleagues and interaction with the whole group.

Group presentations showed that planners were very much aware of the capability and potentials of using planning tools and techniques to reduce, mitigate, and avoid seismic risks in various localities within their cities. Furthermore, they also cited bonus benefits

from implementing risk reduction measures, e.g. promotion of tourism and creation of a healthier environment.

The identified land use planning tools could be classified as regulatory and non-regulatory planning techniques and as locational and structural approaches to DRR.

The most cited regulatory techniques included zoning (e.g. 5-meter buffer zone on both sides of the fault line), new building regulations, strict enforcement of building regulations, while non-regulatory techniques included relocation and provision of new housing through the Community Mortgage Program (CMP), infrastructure improvement and retrofitting, prohibition of new development in hazardous areas, urban redevelopment, creation of parks and open spaces, land readjustment within the built up area located in the fault zone, soil testing, financial incentives, earthquake insurance for building owners, advocacy, and research.

After the group presentations, some points were raised in the open forum. One was the need to have a multi-hazard approach in the integration of risk reduction in land use planning. Though flood risk was cited as an urgent concern in Metro Manila, high intensity but low frequency risks such as earthquakes need to be managed at the same time. Another point raised was the importance of communicating risks and the means of relaying the message to a non-technical audience was also stressed. High tech methods such as GIS are useful but other risk communication means are needed when dealing with the grassroots community. The necessity of participatory methods in land use planning and disaster risk reduction was likewise pointed out as risk management is a shared responsibility.

Lastly, a questionnaire on the ICT/GIS capabilities of the LGUs in Metro Manila was also distributed. The survey would provide inputs in the development and implementation of the web-based training course on land use planning and DRR.

## **Conclusions**

The Workshop showed several important developments in the mainstreaming process of disaster risk reduction.

The Workshop provided evidence of the growing awareness, appreciation and commitment of local government officials to the importance to incorporate disaster risk reduction in their land use planning practice. Moreover, a few inquiries were made from interested cities to join the network of partner cities of EMI which are active in the mainstreaming process of risk reduction in the local planning system and mechanism. This time is ripe to bolster efforts to further promote disaster risk management and its institutionalization not only in the land use and urban planning functions of the government but also in other spheres of governance.

The Workshop also indicated that participating cities were in varying levels of understanding and mainstreaming disaster risk reduction in their comprehensive land use plans based on their group outputs.

Planning practitioners are aware that land use planning represents an untapped opportunity in disaster mitigation, prevention and preparedness. There is indication that planning will continue to receive attention as a non-structural approach to disaster reduction.

There were also expressed needs from the national government organizations to interact with local government units. There is therefore a growing emphasis on inter-agency and multi-level consultations, cooperation and collaboration, especially among planning practitioners when it comes to disaster risk reduction. Further, there was a felt need among city planners to collaborate with neighboring cities in order to have a holistic and comprehensive disaster reduction strategy given their common metropolitan setting.

The Workshop provided a venue for cross-collaboration and inter-agency fertilization of ideas among the participants. This Workshop produced a number of interesting ideas on how to use familiar planning tools from zoning (most popular) to tax incentives (least mentioned) to mitigate and prevent disasters. There are existing laws and regulations, i.e. National Building Code, pertaining to the mitigation of disasters through land use planning but there are not strictly enforced by the authorities. Benefits from disaster risk reduction measures were also pinpointed, the most notable of which were the creation of a healthy environment and higher standards of living.

### **Next Steps**

The strategy of mainstreaming is a means to implement the Disaster Risk Management Master Plan of Metro Manila. The Workshop highlighted that an important step forward in this direction is for local land use planners to enhance their capacities.

Training is a necessity if institutionalizing disaster reduction is to be successful. Seminars, workshops and training courses specifically tailored fit for land use planners are the order of the day.

The Workshop indicated that continuing to provide open avenues for dialogue, and cross-collaboration among different stakeholder groups was a key ingredient in mainstreaming. Multi-sectoral collaborative groups, e.g. focus groups that act as platforms for such exchanges should be further strengthened.

Prepared by: Marqueza Reyes, EMI research associate

## Proceedings

Metro Manila Disaster Coordinating Council (MMDCC)  
Technical Working Group (TWG) Meeting

2:30 - 4:30 p.m. May 25, 2006  
MMDA conference room, 2<sup>nd</sup> floor, MMDA Bldg.

The EMI 3<sup>rd</sup> Team and 5<sup>th</sup> Field Trip members were invited to the meeting of the TWG of MMDCC. On the agenda were: (1) presentation of the proposed MMDCC organizational structure and functions, and the draft resolution approving proposed MMDCC organizational structure, (2) discussion of the creation of the MMDCC Technical Working Group (TWG), and (3) EMI presentation on the 3<sup>rd</sup> program. The meeting was chaired by Ramon Santiago, Assistant Manager for Operations, Metro Manila Development Authority (MMDA). Distributed for all attendees were: the agenda of the meeting, a diagram of the proposed organizational structure, a handout containing the power point presentation describing the composition and tasks of the council and the technical committees proposed to comprise the MMDCC, and the MMDCC draft resolution mentioned above.

The EMI group consisted of: Violeta Seva, Antonio L. Fernandez, Marqueza Reyes, and Cristina Jean Dazo of the EMI Secretariat; Jeanette Fernandez (JF) of EMI/Pacific Disaster Center (PDC), Hossain Kalali of United Nations Development Programme (UNDP)/ Bureau of Crisis Prevention and Recovery (BCPR); and Laurie Johnson from the U.S. PHIVOLCS Director Renato Solidum, the Local Investigator of the 3<sup>rd</sup> program in Manila and member of the MMDCC/TWG, was also present.

The meeting was scheduled to start at 2: 00 P.M. As requested, the group joined the meeting past 2:30 P.M. when the discussion on the reorganization was about to be completed. In accordance with the proposed organizational structure, discussion centered on what tasks of the committees and task groups would do and which agencies/institutions would comprise them.

For the EMI presentations, A.L. Fernandez talked about the status of implementation of the Disaster Risk Management Master Plan (DRMMP) and the products and tools that have been developed for the 3<sup>rd</sup>. Jeanette Fernandez then described two cases from the knowledge base – that of Istanbul and Bogotá – to illustrate how disaster risks are dealt with in two large cities affiliated with the EMI. A.L. Fernandez stressed the desire of EMI to be engaged more fully in the work of local stakeholders in Metro Manila, particularly the MMDCC in the context of the implementation of the DRMMP. J. Fernandez while citing the progress in the two case cities with institutional arrangements of their own, expressed the importance of appreciating the local situation when devising a new structure for DRM in Metro Manila. It was stressed that among the priority action

items in the DRMMP work plan derived from the consultation made in April 2005 is the strengthening of the MMDCC.

H. Kalali explained the involvement of the UNDP and the Provention Consortium in EMI activities. He encouraged the participation of the MMDCC in these activities in support of the initiatives already being done and yet to be undertaken in the 3cd program.

L. Johnson, in recalling the experiences after Hurricane Katrina and the Kobe earthquake, stressed how urgent it is for the MMDCC to prepare and undertake mitigation before any big disaster strikes, since ultimately each member of the organization would be held accountable for either a wrong action or inaction. She also cited that understanding risks could be turned into opportunities such as by adequately addressing risks, a city with riverfronts and similar vulnerable areas might even attract businesses in the long term.

Copies of three brochures, namely: the 3cd program, “New Risk Communication Tools for Megacities” and “A Model for Disaster Risk Management in Megacities: the Metro Manila Case Study” (the latter two are part of the Decision and Policy Support Tools series).

The TWG will meet again on June 15, 2006 (Thursday) at the same venue to obtain feedback on the work plan.

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Prepared by:

Antonio L. Fernandez  
Principal Scientist  
Earthquake and Megacities Initiative

# Proceedings

## Metro-Manila Internet Map Viewer Training Workshops

ICT Laboratory, National Defense College of the Philippines, Camp Aguinaldo,  
Quezon City, Philippines  
May 25 and 26, 2006, 9:00a – Noon and 1:00p – 4:00p

### Introduction

On May 25 and 26, the PDC-EMI-PHIVOLCS team successfully completed four *Metro Manila Internet Map Viewer* training sessions, hosted at the National Defense College of the Philippines ICT Training Laboratory, Quezon City, Philippines. Over 75 local and national government representatives were trained. The training was supported by the Philippine Institute of Volcanology and Seismology, Metro Manila Development Authority, National Defense College of the Philippines, and the Earthquakes and Megacities Initiative Secretariat, Manila.

The training sessions included instructor presentations and hands-on computer working sessions by all students. The goal of the training sessions was to teach each student hands-on use of *The Metro Manila Map Viewer* to gain and apply basic map viewer navigation skills through a series of exercises relevant to disaster management. A training workbook was developed for the training sessions to assist all students to access and display data contained in the table of contents, including impact information about three potential earthquake scenarios for Metro Manila, examine other available infrastructure and planning information, and how to navigate and use simple GIS analytical tools.

The *Metro Manila Internet Map Viewer* is a Web-based, internet accessible, geospatial information application that provides ubiquitous access to local-level GIS data and attributes designed as a prototype communications tool for understanding earthquake risks in Metro Manila, Philippines. The Map Viewer allows access and viewing of earthquake scenario information including peak ground acceleration, intensity, liquefaction, slope stability risk, damage estimates, and loss of life. The Map Viewer also provides information about risk exposure to people, infrastructure, facilities, and critical assets.

Development and deployment of the Metro Manila Map Viewer is the culmination of a collaborative project between PDC, EMI, PHIVOLCS, and MMDA, guided by a formal stakeholder ICT Focus Group, led by PHIVOLCS. The Focus Group met four times in 2005 and 2006 and provided required feedback on several additional occasions via a Yahoo Chat Group mechanism, facilitated by the EMI Secretariat in Manila. As a contribution to the 3cd Program, the Map Viewer technology was created by a PDC technical development team, in Maui, Hawaii. Data for the Map Viewer was contributed by PHIVOLCS and MMDA. Data

presented in the Map Viewer enhances and improves upon the GIS data sets available in the *Metro Manila Earthquake Impact Reduction Study, 2004*.

### **Agenda**

For each training session, Mr. Jim Buika, PDC, Dr. Arturo Daag, PHIVOLCS, and Todd Bosse, PDC, provided 1) a 3cd Program Overview, 2) background on MMEIRS data in the Map Viewer relative to three earthquake scenarios, 3) an overview of Geographic Information System (GIS) concepts and applications, including internet-accessible GIS, 4) how GIS may be used to support disaster reduction and risk management, 5) an introduction to Metro Manila Map Viewer followed by a 6) hands-on student training exercise.

The *Metro Manila Internet Map Viewer* can be accessed at: [www.pdc.org/metromanila](http://www.pdc.org/metromanila) (temporary user ID: mmmv, Password: mmmv123). The Student Training Manual is posted to the Map Viewer home page (URL above) as well as posted to the Disaster Risk Management Library web page in the *Megacities Disaster Risk Management Knowledge Base* at [www.pdc.org/emi](http://www.pdc.org/emi).

Attachment I is the class attendance lists for the four sessions.

Attachment II provides feedback summary statistics gathered from the training statistics.

Training certificates of completion were presented to each of the students.

### **Concluding remarks**

The development, training, and implementation of the Metro Manila Internet Map Viewer risk communication tool is part of the *Cross Cutting Capacity Development Program, 2004-2006*, to develop a *Disaster Risk Management Master Plan for Metro Manila*, based on both data sets and planning recommendations collected and developed as part of the PHIVOLCS-MMDA-Japan International Cooperation Agency project, *Metro Manila Earthquake Impact Reduction Study*, conducted from 2002-2004. The objective of the Map Viewer is to effectively communicate earthquake risk information to many diverse stakeholders and decision makers in Manila in order to mainstream disaster risk reduction activities and processes into local government, Metro Manila planning agencies, and national government activities relative to Metro Manila.

### **Next Steps**

Next steps include continuing to work with PHIVOLCS as the Local Investigator, the EMI Secretariat, and ICT Focus Group, for which PHIVOLCS is the lead, to:

1. Implement the Map Viewer technology locally in Manila,
2. Continue training via locally-trained instructors from the ICT Focus Group,
3. Understand and document how the Map Viewer can assist in communicating risk to promote disaster risk reduction activities throughout Metro Manila, and

4. Develop a draft strategic plan for augmenting functionality and use of the map viewer technology as a multi-hazard risk reduction planning tool.

To implement the Map Viewer locally in Manila, PDC will continue to work with the EMI Secretariat, PHIVOLCS, and MMDA to examine the ICT capabilities available in Metro Manila to transition the Metro Manila Internet Map Viewer system to a local server with hardware, software, and support personnel to manage the Map Viewer locally. An Implementation Plan outlining options and estimated costs will be presented to all parties by PDC. Until this implementation takes place, PDC will maintain the Map Viewer on its Maui computer system until December 15, 2006.

PDC, EMI, and the Local Investigator will develop a draft strategy for application and enhancement of the Map Viewer technology in Metro Manila relative to the Disaster Risk Management Master Plan for Metro Manila. The partners will work with the ICT Focus Group to continue implementation as well as seek additional resources to implement priority activities identified in the Strategic Plan.

**Attachments:**

Attachment I: Attendance Map Viewer Trainings  
Attachment II: Map Viewer Participant Feedback

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