



The Disaster Risk Management Master Plan of Metro Manila



Earthquakes and
Megacities Initiative



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Earthquakes and Megacities Initiative
2F Puno Bldg. Annex, 47 Kalayaan Ave.
Quezon City 1101, Philippines
T/F: +63-2-9279643; T: +63-2-4334074
Email: info@emi-megacities.org
Website: <http://www.emi-megacities.org>

3rd Program

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The Disaster Risk Management Master Plan of Metro Manila



**Earthquakes and
Megacities Initiative**

A member of the U.N. Global Platform for Disaster Risk Reduction

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Metro Manila's Disaster Risk Management Master Plan

Introduction

Recognizing the high disaster risk faced by Metro Manila, various organizations and local stakeholders have initiated the development of a Disaster Risk Management Master Plan (DRMMP) to guide the integration of a risk reduction agenda into ongoing governance and economic processes in the capital region. This work, undertaken under Phase 1 of the Cross-Cutting Capacity Development (3cd) Program, incorporates previous risk assessments and study results as the basis for a cohesive, consensus-based disaster risk management instrument.

Situation Overview

Metro Manila, with a population of about 12 million, is one of the largest and most complex urban regions in Asia. It is an agglomeration of 17 cities and municipalities that are prone to several natural hazards such as earthquakes, landslides, floods, and tsunamis. Auspiciously, government organizations, with support from international institutions, conducted relevant studies focused on risk assessment and disaster management, specifically on earthquakes, viz:

- EqTAP (1999-2003), a multi-lateral research project for earthquake and tsunami disaster mitigation in the Asia-Pacific region, sponsored by the Government of Japan and executed by the Earthquake Disaster Mitigation Research Center (EdM-NIED); includes a detailed case study of Metro Manila to develop an understanding of how to operationalize the EqTAP approach and to develop a risk management framework¹. The recommendations of this project have not been fully implemented.

- The Government of Japan, through the Japan International Cooperation Agency, in collaboration with the Metropolitan Manila Development Authority (MMDA) and the Philippine Institute of Volcanology and Seismology (PHIVOLCS) conducted the Metropolitan Manila Earthquake Impact Reduction Study or MMEIRS (2002-2004) to formulate a master plan for earthquake impact reduction for Metro Manila. The MMEIRS is comprehensive yet has been barely implemented.
- The Pacific Disaster Center completed the Multi-Hazard Urban Risk Assessment for Marikina City (2004) and Guidelines for Implementing Multi-Hazard Risk Reduction Strategies for an Urban Environment that provide Marikina City officials with a framework for assessing risk and mitigating the impacts from riverine flooding, urban flooding, and earthquakes.

Moving from Analysis to Action

In July 2004, the 3cd Program was introduced in Metro Manila by the Earthquakes and Megacities Initiative (EMI) in cooperation with EdM-NIED. It is a process-oriented, inter-disciplinary program conceived to engage and support local governments of complex urban areas in managing and reducing urban disaster vulnerabilities and risk through capacity and institutional building strategies, to wit:

- Empowerment of local governments, local institutions, and local communities to plan and implement disaster risk reduction (DRR).
- Mainstreaming of DRM as a regular management and planning process and integral part of local government functions, operations, and services.

These overall strategies guide the development of a consensus-based, sustainable Disaster Risk Management Master Plan (DRMMP).

In November 2004, the Pacific Disaster Center joined EMI in a collaborative effort to accelerate the implementation of Metro Manila’s DRMMP and shift the vision from response management to risk management.

The Disaster Risk Management Master Plan of Metro Manila

The DRMMP is both a process and a plan. As a process, it facilitates a cross-sectoral, inter-agency course of action that is highly participatory and collaborative, as DRM is a shared responsibility. It engages local stakeholders towards the elaboration of a disaster risk management agenda that is fleshed out into a DRM master plan consisting of legal, institutional, financial, social, and technical elements.

Overarching Goals of Metro Manila’s DRMMP

In the context of the 3cd Program for Metro Manila, the DRMMP generally aims to:

- Establish a sound institutional and legal framework for an effective DRM system, and
- Fully integrate DRM into the ongoing governance, business, and economic processes in the city.

In January 2005, a Memorandum of Cooperation (MOC) was signed between EMI and MMDA towards the development and implementation of a Disaster Risk Management Master Plan of Metro Manila. The project is undertaken in partnership with PHIVOLCS as the Local Investigator. An agreement was also reached with three cities in Metro Manila—Quezon, Makati and Marikina—to serve as pilot cities for the DRMMP implementation.

After a highly inclusive and participatory process, a consensus-based DRMMP of Metro Manila was crafted by all partners and stakeholders in a workshop held in August 2005. Metro Manila’s DRMMP builds on the significant work already accomplished by various local, national, and international initiatives, in particular the MMEIRS. To implement the DRMMP, field trips, stakeholders’ consultation workshops, seminars-workshops, and focus group discussions have been undertaken by the partnership under the auspices of the 3cd Program (See Annexes).

Elements of Metro Manila's DRMMP

A 10-point DRMMP was formulated in order to flesh out the vision and goals of the DRMMP of Metro Manila.

	DRMMP Elements
1	Strengthen the Metro Manila Disaster Coordinating Council (MMDCC).
2	Promote the adoption of disaster management ordinances by each city and municipality.
3	Promote the revitalization of city/municipal barangay disaster coordinating councils.
4	Institutionalize disaster risk management within local government framework and financing.
5	Enhance lateral and vertical inter-agency and inter-governmental communication and coordination.
6	Enhance legal basis for disaster risk management at national level by updating/replacing PD1556.
7	Promote policies that encourage implementation of DRR and develop mechanisms for mainstreaming DRR within local government functions.
8	Promote local government mitigation planning through existing planning tools.
9	Conduct training needs assessments and develop capacity building programs.
10	Strengthen barangay preparedness level for disaster response and relief.

Initially, a DRM framework and agenda were developed based on the MMEIRS. In particular, the basis used for this framework was the first of MMEIRS' five Areas of Focus for Prioritization: Enhance legal framework and institutional capacity for disaster [risk] management. Under this Area of Focus, the relevant priorities in the context of the Cross-Cutting Capacity Development (3cd) Program are: (1) strengthening of institutional capacity for mitigation, preparedness

and response, (2) strengthening of inter-institutional coordination and institutional framework, (3) enhancing legal basis for disaster management and policy environment for DRM, and (4) strengthen community preparedness.

Through a participatory process of review and prioritization given the local context, with inputs from EMI and its international partners based on their collective experiences around the world, a DRMMP consisting of 10 elements was further crystallized by local partner organizations and stakeholders in a series of consultation and stakeholders' workshops held in April 2005. Objectives that correspond to each element in the table above were ranked based on the following criteria: relevance and viability, importance, resources and constraints, implementation process, timeframe and ownership. Most of these elements represent actions to be taken by MMDA, Metropolitan Manila Council, and the cities and municipalities comprising Metro Manila with support from relevant national government agencies. Some of these elements have also been prioritized by the Metro Manila Council through MMDA Resolution No. 04-03, Series of 2004, issued on 29 January 2004.

*“A highly responsive and resilient community for a safe
and protected built and natural environment.”*

- Vision of local stakeholders for Metro Manila, 2004

Objectives of Metro Manila’s DRMMP

The table below lists the corresponding objectives and action items of each of the 10 elements of the DRMMP ranked according to priorities set by local partners and stakeholders.

Rank	Objectives	Action Items
1	To reorganize, institutionalize and activate the MDCC as a vital body pursuing an action agenda	1.1. Establish a new interagency/inter-sectoral task group to complement existing MDCC. 1.2. Develop the task group to focus on implementation, action stemming from the MMDCC strategic policy initiatives. 1.3. Take steps to implement MMDA Chairman’s instructions regarding priority areas.
2	To provide a stronger legal basis and regular department status and budget for local disaster management offices or organizations that now exist on the basis of executive orders and to provide legal basis for mitigation policies and support of DRM programs.	2.1. Find out by survey/workshops what is currently in place and/or intended. 2.2. Seek alternatives in order to institutionalize DRM in LGUs through legal instruments. 2.3. As a start, MMDA revisit the resolution to strengthen local DRM offices and re-emphasize significance of DRM. 2.4. Increase awareness of local elected officials about DRM through improved training sessions, metropolitan wide conferences, better access to DRM Sound Practices (i.e. Internet).
3	To create more viable DRM organizations and to sustain awareness of the need for proactive disaster preparedness and mitigation strategies.	3.1. Obligate LGUs to ensure adoption and implementation of proactive measures to promote DRM including reorganization of DCCs, implementation and monitoring of action plans. 3.2. Increase commitment to DRM by politicians through ways and means that enable them to own their constituents’ hazards-related problems.

Rank	Objectives	Action Items
4	To improve the financial viability of local DRM programs by institutionalizing regular funding for pre-disaster mitigation and preparedness.	4.1. Explore different sources of funding for DRM activities of LGUs, including local private as well as international sources.
5	To establish city clusters for DRM within Metro Manila through MoUs authorizing inter-city cooperation and mutual aid for disaster preparedness planning, mitigation strategies, and response assistance.	5.1. Seek instruments and mechanisms that reduce risk among clusters of LGUs based on existing risk and vulnerabilities (i.e. MOU, agreements, etc.).
6	To update and strengthen the legal basis for the Philippines disaster management system to reflect the current holistic approach to disaster risk management and its relation with urban planning and development.	6.1. Review drafts of proposed legislation (amendments/new) to ensure concerns of LGUs, NGOs, and other stakeholders in MM are addressed properly. 6.2. Enhance legal framework for DRM. 6.3. Identify other laws, regulations and/or ordinances that have a link to DRM and which should also be reviewed.
8	To facilitate local government implementation of earthquake mitigation programs and preparedness for emergency response and relief.	8.1. Improve access to planning tools, i.e. Earthquake. Mitigation Handbook and Planning Guide through internet. 8.2. Use various delivery mechanisms to disseminate existing and future DRM knowledge and skills development resources (barangay-level interventions, social services extension work).

Rank	Objectives	Action Items
9	To capacitate city and barangay DCC members and institutions for disaster preparedness and mitigation in order to protect lives and property.	9.1. Systematize training needs assessment in the field of DRM. 9.2. Find ways to monitor and evaluate training activities for consistency, impact and effectiveness. 9.3. Conduct training-of-trainers program based on priorities resulting from needs assessment.
10	To enhance barangay-level mitigation planning and preparedness for response and relief by updating planning guidance and barangay response readiness, plans, and networking with CBOs to assure appropriate community response to a disaster.	10.1. Establish an accreditation system to ensure quality of barangay-level training concerning DRM 10.2. Coordinate barangay-level capacity building activities.

The action items designed to achieve the objectives are spread over a 5-year period (2005-2010). Some of the action items can be done immediately while some others require more resources in order to start them. Therefore, the objectives were classified in terms of the time perspective defined by resource requirements. Short-term objectives (Objectives 1, 2, 6 and 9) and action items are do-able with existing financial and human resources within existing framework; lasting from weeks to a few months. Mid-term objective (Objective 5) requires coordination within existing arrangements; lasting from months to a few years. Mid- to long-term objectives (Objectives 3, 7 and 10) need additional resources and major legal and institutional changes; lasting for 2-3 years or more. Finally, long-term objectives (Objectives 8 and 4) require up to 5 years or more.

Implementation Work Outputs of Metro Manila's DRMMP

The elements and objectives of Metro Manila's DRMMP were further processed and distilled into an implementation work output. This was done by first identifying the five thematic areas of cooperation with MMDA and followed by a large gathering of stakeholders in August 2005 to fast-track the implementation of the DRMMP. The implementation work output also integrates the areas of facilitation in which the 3cd Program can substantially contribute.

Implementation Work Output (IWO)	Description	Local Lead Partners
IWO No. 1	Develop and Institutionalize technologies for Risk Communication and Preparedness	PHIVOLCS; MMDA
IWO No. 2	Incorporate risk reduction criteria in land-use and urban planning	MMDA Planning Office; Marikina
IWO No. 3	Training Needs Assessment and Capacity Building for DRM	OCD; MMDA
IWO No. 4	Mobilizing Resources among NGO's, professional Organizations and Private Sectors in DRM Agenda	PHIVOLCS; MMDA; PICE
IWO No. 5	Improving legal and institutional arrangements for improved DRM Delivery	MMDA;NDCC

The DRMMP Implementation Process

For the implementation of the DRMMP, five Focus Groups have been created, one for each of the Implementation Work Outputs of the DRMMP. These are:

Focus Group No. 1 (FG1) – Information and Communication Technology

Focus Group No. 2 (FG2) – Land Use and Urban Planning

Focus Group No. 3 (FG3) – Training Needs Assessment and Capacity Building

Focus Group No. 4 (FG4) – Mobilization through Non-Government Organizations and other Civil Society Groups
Focus Group No. 5 (FG5) – Legal and Institutional Arrangements

The implementation process of the DRMMP is based on a two-pronged strategy:

- a) Sustained involvement of the 3cd Program Implementation Team through field trips, consultations, workshops, and strategic planning.
- b) Creation of ownership and sustainability mechanisms by anchoring the process of implementation to local and national stakeholders through the involvement of the Local Investigator, local partner organizations, partner cities, and focus groups.

The Local Investigator supervises and coordinates the implementation of the DRMMP. The Focus Groups plays an essential role in DRR mainstreaming and DRMMP implementation. This implementation approach conforms to the 3cd Program principle that institutionalization and sustainability can only be achieved if implementation is carried out by concerned local institutions, national government agencies and organizations, with a broad involvement of stakeholders representing the local government units and communities. In this context, the Focus Groups are the mechanisms for ownership building, for mainstreaming and for sustainability. (See Annex1 for the list of field trips and Annex 2 for the list of focus group discussions and meetings.)

Annex 1

A Chronology of the Metro Manila Field Trips

1st Field Trip – August 2004, city workshops in Quezon City and Makati City

2nd Field Trip – April 2005, stakeholders' workshop introducing the concept of DRMMP; formal discussions with MMDA; incorporation of three pilot cities

3rd Field Trip – August 2005, stakeholders' workshop in Makati City; identification of five areas of cooperation and establishment of five focus groups

4th Field Trip – December 2005, seminar-workshop for MMDA officials and staff on mainstreaming DRR in metropolitan planning and functions; seminar-workshop for Metro Manila planning officers on land use planning for DRR; focus groups workshop

5th Field Trip – May 2006, workshop on the Megacity Indicators System (MEGA-Index); seminar-workshop for Metro Manila planning officers on mainstreaming DRR in land use planning; training workshop on the Metro Manila Map Viewer (MEGA-View)

6th Field Trip – October 2006, consultative forum on the consolidated DRM bill; validation workshop on the risk-sensitive land use planning eLearning course (MEGA-Plan); and round-table discussion on MEGA-Index.

Annex 2

List of 3cd Field Trip and Focus Group Activities

Date:	Activity:	Venue	Participants
Field Trips			
08/16/04	MM 1st FT: City Workshop	Quezon City	LWG
04/20/05	MM 2nd FT: Stakeholder's Workshop	MMDA	
08/02/05	MM 3rd FT: Focus Group Workshop	Makati City	101
12/01/05	MM 4th FT: Seminar-Worksho on Mainstreaming Disaster Risk Reduction in Metropolitan Planning	Conference Rm, MMDA	51
12/02/05	MM 4th FT: 3cd City Disaster Risk Managmeent Master Plan: Implementation in Metro Manila, Focus Groups Workshop	Marikina Hotel, Marikina	63
12/05/05	MM 4th FT: 3cd Land Use and Urban Planning Tools for Disaster Reduction	Auditorium, PHIVOLCS	75
05/22/06	MM 5th FT: The First Seismic Risk Reduction and Risk Management Indicators Workshop in Metro Manila	Auditorium, PHIVOLCS	51
05/23/06	MM 5th FT: Mainstreaming Disaster Risk Reduction in Land Use Planning Seminar-Workshop	Auditorium, PHIVOLCS	71
05/25/06	MM 5th FT: MMEIRS Map Viewer User's Training	ICT Lab, NDCP	57
05/26/06	MM 5th FT: MMEIRS Map Viewer User's Training	ICT Lab, NDCP	58
10/13/06	MM 6th FT: Consultative Forum on the Consilidated DRM Bill	Auditorium, PHIVOLCS	109
10/16/06	MM 6th FT: Round-Table Discussion on MEGA-Index	Auditorium, PHIVOLCS	22
10/16/06	MM 6th FT: MEGA-Plan Validation Workshop	Auditorium, PHIVOLCS	40

Annex 2

List of 3rd Field Trip and Focus Group Activities

Group Activities		Venue	Participants
08/11/05	FG 2 Mtg	Conf Rm, PHIVOLCS	12
01/03/06	FG 1 Mtg	Conf Rm, PHIVOLCS	16
01/11/06	FG 3 Mtg	Makati City Hall	
01/20/06	FG 4 Mtg	Conf Rm, Makati City Hall	16
02/03/06	FG 2 Mtg	Shoe Hall, Marikina City	7
03/13/06	FG 5 Mtg: Creating a Disaster Risk Management Bill: What are the essential components?	Conf Rm, Makati City Hall	9
03/14/06	FG 3 Mtg	Conf Rm, PHIVOLCS	
03/14/06	Indicators FG	Conf Rm, PHIVOLCS	
03/20/06	FG 4 Mtg	Power Plant, Makati City	4
03/24/06	FG 2 Mtg	Conference Room, Quezon City	10
05/02/06	FG 2 Mtg	UDD, Makati City Hall	9
06/28/06	FG 5 Mtg: DRM Forum Organizing Committee	EMI	5
07/19/06	FG 5 Mtg: DRM Forum Organizing Committee	EMI	7
08/10/06	FG 5 Mtg: DRM Forum Organizing Committee	Conf Rm, PHIVOLCS	6
09/01/06	FG 5 Mtg: DRM Forum Organizing Committee	OCD	4
09/18/06	FG 5 Mtg: DRM Forum Organizing Committee	EMI	5

Annex 3

Focus Group Members

Focus Group 1

1. Almonte, Kathleen (Makati City)
2. Bautista, Bart (PHIVOLCS)
3. Bosse, Todd (PDC)
4. Buika, Jim (PDC)
5. Castro, Ninoy (OCD)
6. Daag, Arturo (PHIVOLCS)
7. Daroy, Mhel (Marikina City)
8. Doroy, Nelson (Makati City)
9. Jajalla, Joseph (MMDA)
10. Ledesma, Tara (EMI)
11. Lorenzo, Nonoy (OCD)
12. Maximo, Raymond (PHIVOLCS)
13. Palomar, Lisa (Marikina City)
14. Reyes, Marqueza (EMI)
15. Santiago, Ramon (MMDA)
16. Serrana, Jorge Jr. (Quezon City)
17. Seva, Violeta (EMI/Makati City)
18. Solidum, Renato Jr. (PHIVOLCS)
19. Sy, Josie (MMDA)
20. Villena, Edgar (Makati City)

Focus Group 2

1. Aguilar, Jun (Marikina City)
2. Alampay, Ma. Lourdes B. (PIEP)
3. Alcala, Dolores (HLURB)
4. Ang, Grace (HLURB)
5. Borje, Julie (Marikina City)
6. Cabantog, Shane (Makati City)
7. Cueto, Visitacion (Makati City)
8. De Castro, Erwin (MMDA)
9. Dela Cruz, Ma. Cristina (HLURB)
10. Fernandez, Jeanette (EMI/PDC)
11. Gatchalian, Evelyn (HLURB)
12. Gil, Sharon (UNDP)
13. Lanuza, Angelito (PHIVOLCS)
14. Lopez, Wilredo (DPWH)
15. Ledesma, Tara (EMI)
16. Mantego, Annabelle (Makati City)
17. Medallo, Cora (MMDA)
18. Moleta, Russelle (MMDA)
19. Panganiban, Merlina (Makati City)
20. Panol, Myla (PHIVOLCS)
21. Reyes, Marqueza (EMI)
22. Salapare, Marilyn (Makati City)

Annex 3

Focus Group Members

- | | |
|-------------------------------------|--|
| 23. Samudio, Milagros (Makati City) | 13. Patalinghog, Carol (Quezon City) |
| 24. Sese, Rodolfo (Makati City) | 14. Razal, Tony (Marikina City) |
| 25. Sese, William (NEDA) | 15. Reyes, Hector C. (Makati City) |
| 26. Tena, Cherry Rose (Quezon City) | 16. Reyes, Marqueza (EMI) |
| 27. Villamor, Veronica (MMDA) | 17. Santos, Geraldine (Makati City) |
| 28. Villarino, Kristine (NEDA) | 18. Torres, Amaryllis (EMI/UP) |
| 29. Walde, Xenon L. (Makati City) | 19. Verzonilla, Reynaldo (Quezon City) |
| 30. Yumul, Rosemarie (Makati City) | 20. Villegas, Mylene (PHIVOLCS) |

Focus Group 3

1. Aguila, Bong (Quezon City)
2. Borje, Julie (Marikina City)
3. Cabalza, Chester (NDCP)
4. Candelario, Mary Joy (Marikina City)
5. Cruz, Susan (OCD)
6. Dela Rosa, Wilfredo (Marikina City)
7. Divina, Roel (MMDA)
8. Fernandez, Antonio (EMI)
9. Go, Marilyn M.D. (DOH)
10. Ledesma, Tara (EMI)
11. Macasieb, Ma. Corazon (MMDA)
12. Malacad, Mario (MMDA)

Focus Group 4

1. Abat, Crispina (OCD)
2. Almonte, Kathleen (Makati City)
3. Amarillo, Ma. Teresa (MMDA)
4. Bautista, Ma. Leonila (PHIVOLCS)
5. Briones, Ferdie (PICE)
6. Caliao, Sabeniano Jr. (DPWH)
7. Cruz, Milosil (DSWD)
8. Doroy, Nelson B. (Makati City)
9. Espiritu, Alfonso (Marikina City)
10. Genota, Jorge (ASEP)
11. Ledesma, Tara (EMI)
12. Libang, Ronaldo (CDRC)

Annex 3

Focus Group Members

- | | |
|---|---|
| 13. Maghacot, Pacifico (Quezon City) | 4. Britton, Neil (EDM-NIED) |
| 14. Mina, Rogelio (Makati City) | 5. Carlos, Clarita (UP) |
| 15. Munoz, Albert (PNRC) | 6. De Leon, Corazon Alma (PNRC) |
| 16. Pacheco, Benito (Vibrametrics) | 7. Duque, Atty. Priscilla (OCD) |
| 17. Pagulayan, Col. Victor R. (Makati City) | 8. Espiritu, Alfonso (Marikina City) |
| 18. Pino, Jose Manuel (UAP) | 9. Giron, Restituto Sr. (Makati City) |
| 19. Reyes, Hector C. (Makati City) | 10. Lansang, Noel L. (Quezon City) |
| 20. Reyes, Marqueza (EMI) | 11. Pagulayan, Col. Victor R. (Makati City) |
| 21. San Pablo, Jojie (CNDR) | 12. Penano, Cherrie (Makati City) |
| 22. Serion Margeline (MMDA) | 13. Pilar, Nestor L. (NDCP) |
| 23. Seva, Violeta (EMI/Makati City) | 14. Rabonza, Gen. Glenn (NDCC) |
| 24. Simon, Floreen (CNDR) | 15. Reyes, Hector C. (Makati City) |
| 25. Sira, Warren (Marikina City) | 16. Santiago, Asteya M. (EMI/UP/PLANADES) |
| 26. Tiglao, Robert (PHIVOLCS) | 17. Seva, Violeta (Makati City) |
| 27. Valdes, Mario (PIRA/MAFSAFI) | 18. Sosmena, Gaudioso (UPI/LOGODEV) |
| 28. Villena, Edgar (Makati City) | 19. Villarino, Kristine (NEDA) |

Focus Group 5

1. Amante, Salvador (MMDA)
2. Amparo, Neri G. (OCD)
3. Brien, Madeline C. (Quezon City)

Annex 3
Focus Group Members

Indicators Focus Group

1. Abdulrahman, Thelma (DILG)
2. Ablay, Joey (DILG)
3. Bautista, Ma. Leonila (PHIVOLCS)
4. Diaz, Nora (HLURB)
5. Fernandez, Antonio (EMI)
6. Go, Matilde (DILG)
7. Ledesma, Tara (EMI)
8. Macasieb, Ma. Corazon (MMDA)
9. Oninones, Jose (Makati City)
10. Pagulayan, Col. Victor R. (Makati City)
11. Panol, Myla (PHIVOLCS)
12. Reyes, Hector C. (Makati City)
13. Sandoval, Gerardo (SWS)
14. Taningco, Runel (HLURB)
15. Villegas, Ma. Mylene (PHIVOLCS)

List of EMI Publications

Proceedings Report

- PR-07-01:** Stakeholders' Evaluation of the Cross-Cutting Capacity Development Program in Metro Manila, Philippines, Phase 1, 2005-2006
- PR-06-01:** Mainstreaming Disaster Risk Reduction through Land Use Planning and Enhancing Risk Management Practices
- PR-06-02:** Enhancing Local Partnership and Stakeholders' Ownership: Implementing the Disaster Risk Management Master Plan in Metro Manila
- PR-06-03:** Disaster Risk Reduction of Mega-Urban Regions

Topical Report

- TR-07-01:** Application of Indicators in Urban and Megacities Disaster Risk Management: A Case Study of Metro Manila
- TR-07-02:** Urban and Megacities Disaster Risk Reduction: Manual of Sound Practices

Brochure

- BR-07-01:** EMI Promotional Brochure, 2nd ed.
- BR-07-02:** The Disaster Risk Management Master Plan of Metro Manila
- BR-06-01:** EMI Promotional Brochure, 1st ed.
- BR-06-02:** Megacities Disaster Risk Management Sound Practices in East and South-Central Asia

3cd Implementation Team - Metro Manila

Earthquakes and Megacities Initiative, EMI

Dr. Fouad Bendimerad, Chairman

Mr. Kristoffer Berse, Knowledge Management Coordinator

Dr. Khalid Bouzina, Project Manager

Ms. Jeannette Fernandez, Component 1 Coordinator

Ms. Tara Ledesma, Program Assistant

Ms. Aubrey Lo, Finance and Administrative Assistant

Mr. Irwin Gabriel Lopez, Research Assistant I

Ms. Shirley Mattingly, 3cd Program Director

Ms. Nadia Pulmano, Research Assistant III

Dr. Marqueza Reyes, Urban Disaster Risk Reduction Specialist

Atty. Violeta Seva, General Secretary and Treasurer

Ms. Rhea Rose Victoria, Operations Coordinator

Philippine Institute of Volcanology and Seismology

Dr. Renato U. Solidum Jr., PHIVOLCS Director and 3cd Local Investigator

Metro Manila Development Authority

Mr. Ramon Santiago, Director for Special Operations

Makati City

Hon. Jejomar Binay, City Mayor

Marikina City

Hon. Ma. Lourdes Fernando, City Mayor

Quezon City

Hon. Feliciano Belmonte, City Mayor

<http://www.emi-megacities.org>

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Earthquakes and Megacities Initiative
2F Puno Bldg. Annex, 47 Kalayaan Ave.
Quezon City 1101, Philippines
T/F: +63-2-9279643; T: +63-2-4334074
Email: info@emi-megacities.org