Quezon City Disaster Risk Reduction and Management Council

2nd City to City Exchange and Mentoring Program
Knowledge Sharing among Cities for Strengthening Resiliency and Safety in Urban Informal Settlement

QC DRRM Initiatives and Programs
February 16-19, Asia Star Hotel, Tacloban City
LCP, UN-HABITAT UNICEF

Karl Michael E. Marasigan
Department of Public Order and Safety,
Disaster Control Division, OIC
QCDRRMO
Quezon City Disaster Risk Reduction and Management Council

PROFILE

PHYSICAL DATA

Location: NE of Metro Manila
Land Area: 16,112.58 hectares
No. of Bgys: 142

2009 Actual Land Use

<table>
<thead>
<tr>
<th>Use</th>
<th>Total (in has)</th>
<th>% to Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
<td>5,542.00</td>
<td>34.40%</td>
</tr>
<tr>
<td>Commercial</td>
<td>1,170.93</td>
<td>7.27%</td>
</tr>
<tr>
<td>Industrial</td>
<td>871.19</td>
<td>4.17%</td>
</tr>
<tr>
<td>Institutional</td>
<td>1,158.42</td>
<td>7.19%</td>
</tr>
<tr>
<td>Military</td>
<td>201.16</td>
<td>1.25%</td>
</tr>
<tr>
<td>Cemetery</td>
<td>93.85</td>
<td>0.59%</td>
</tr>
<tr>
<td>Utility</td>
<td>206.43</td>
<td>1.28%</td>
</tr>
<tr>
<td>Vacant</td>
<td>1,250.52</td>
<td>7.70%</td>
</tr>
<tr>
<td>Open Space</td>
<td>227.11</td>
<td>1.41%</td>
</tr>
<tr>
<td>Informal</td>
<td>708.16</td>
<td>4.35%</td>
</tr>
<tr>
<td>Settlers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reservoir</td>
<td>2,437.75</td>
<td>15.13%</td>
</tr>
<tr>
<td>Roads</td>
<td>2,297.92</td>
<td>14.20%</td>
</tr>
<tr>
<td>Waterways</td>
<td>57.14</td>
<td>0.35%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16,112.58</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

SOCIAL DATA

People

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>School Age Population (3-21 years old) (2010)</td>
<td>1,029,819 (37.43%)</td>
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<tr>
<td>3-4 yrs old (day care)</td>
<td>11%</td>
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<tr>
<td>5 yrs old (pre-school)</td>
<td>5%</td>
<td></td>
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<tr>
<td>6-11 yrs old (elem level)</td>
<td>31%</td>
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</tr>
<tr>
<td>12-15 yrs old (sec level)</td>
<td>21%</td>
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</tr>
<tr>
<td>10-21 yrs old (tertiary level)</td>
<td>32%</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2,761,720</td>
<td>23.29%</td>
<td>2.42</td>
<td>2,988,058</td>
<td>171</td>
<td>634,349</td>
<td>4.3</td>
<td>Male:Female: 48.81%:51.19%</td>
</tr>
</tbody>
</table>
LEGAL MANDATES

Republic Act No. 10121
Otherwise known as the “Philippine Disaster Risk Reduction and Management Act of 2010”

EXECUTIVE ORDER NO. 23 Series of 2010
ORGANIZING THE QUEZON CITY DISASTER RISK REDUCTION AND MANAGEMENT COUNCIL (QCDRRMC), REDEFINING ITS FUNCTIONS, PROVIDING FOR ITS COMPOSITION AND FOR OTHER PURPOSES, PURSUANT TO R.A. No. 10121
LEGAL MANDATES

OFFICE ORDER NO. 72
CONSTITUTING THE WEST VALLEY FAULT TASK GROUP, REDEFINING ITS FUNCTIONS AND PROVIDING FOR ITS COMPOSITION

ORDINANCE NO. SP- 2290, s-2014
ORDINANCE CREATING THE QUEZON CITY DISASTER RISK REDUCTION and MANAGEMENT OFFICE (QCDRRMO), DEFINING ITS COMPOSITION, APPROPRIATING FUNDS THEREOF AND THEROF AND FOR OTHER PURPOSES.
Quezon City Disaster Risk Reduction and Management Council

QC DRRM Fund Allocation

- Gross City Income: 95%
- 5% Gross Income: 650 Mphp/year

Allocation:
- 30% QRF Actual Disaster Expenditures: 100 M
- 70% Pre Disaster Activities: 400 M
Prevention and Mitigation:

Engineering Intervention:

Road and Water ways Retaining Wall Project at Lower Empire, Barangay Payatas
Quezon City Disaster Risk Reduction and Management Council

Prevention and Mitigation:

200 M DRRMF/ year for retaining wall project
HAZARDS, VULNERABILITY AND RISK ASSESSMENT REPORT (HVRA)
Provides the scientific information related to Quake

- Earthquake Hazards: Fault Location, Ground Shaking, Liquefaction, Fire Following
- Earthquake Risk Parameters: Casualty Estimates, Distribution of damage to buildings, critical facilities, high loss facilities
- Potential damage to Transportation systems and lifelines
- Identification of hotspots for Flood, Quake and Combined
Quezon City Disaster Risk Reduction and Management Council

HAZARDS, VULNERABILITY AND RISK ASSESSMENT REPORT (HVRA)

Provides the scientific information related to flood

- Flood Susceptibility Maps
- Flood Risk Parameters (Population Affected, Casualty, Displaced population, Economic Loss, Impact on High Loss and Critical Facilities)
RISK HOTSPOTS IN QUEZON CITY

• Physical Risks
  • Projected Population Loss (ie. displaced population, fatalities, injuries, etc.)
  • Projected Building Loss (ie. collapsed bldgs, partially damaged bldgs, highly damaged bldgs, etc.)
  • Critical Facilities Exposure to EQ and Floods (ie. hospitals, hazardous facilities, transportation infra, etc.)

Based on the HVRA results, the barangays that will suffer the most injuries are Bataan Hills (4,324), Commonwealth (3,130), Tandang Sora (2,571), Bagong Silangan (2,442), and Holy Spirit (2,240).
Quezon City Disaster Risk Reduction and Management Council

RISK HOTSPOTS IN QUEZON CITY

- Socio-economic Impact
  - Social Vulnerability (ie. vulnerable groups population, education, urban congestion, etc.)
  - Coping Capacity (ie. hospital capacity, accessibility, etc.)

4.C.4. Socio-Economic Hotspots

Botocan, San Vicente, Krus na Ligas, Escopa 3 and Escopa 1 have the highest social vulnerability and lowest coping capacities of all Barangays in Quezon City according to the socio-economic impact factor ranking.

Tagumpay, Botocan, Escopa 1, Bagumbuhay and San Vicente have the highest rates of vulnerable groups (disabled, elderly, children and slum dwellers).

Botocan has the highest population density followed by Escopa 1 and Capri.

Chapter 4.C. Combined Risk Assessment UDRI

Vulnerability and Risk Assessment
Quezon City Disaster Risk Reduction and Management Council

Disaster Mitigation in Housing Project: Inter Agency Coordination for Housing Project/Community Mortgage Program (CMP) Housing Community Development and Resettlement Department (HCDRD) Social Housing Finance Corporation (SHFC)

Thru HVRA the proposed location is identified if;
• Susceptible to Land Slides
• Flood Prone Area
• Near the West Valley Fault
Location of the West Valley Fault in Quezon City
Quezon City Disaster Risk Reduction and Management Council

Preparedness:
FORMULATION OF CONTINGENCY PLAN
FINAL WRITESHOP (MAR. 11-12, 2014)

CONTINGENCY PLAN
For Flood and Earthquake
Quezon City Disaster Risk Reduction and Management Council

Preparedness: Incident Command System

December 28, 1014
Quezon City Disaster Risk Reduction and Management Council

**Preparedness:** First Batch in National Capital Region (NCR), Rapid Damage Assessment and Need Analysis (RDANA) Training.
<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 28, 2011</td>
<td>Ocular inspection at Quezon City/Montalban Rizal Boundary</td>
</tr>
<tr>
<td>April 29, 2011</td>
<td>Press Conference at PHIVOLCS/Walk the Fault</td>
</tr>
<tr>
<td>May 13, 2011</td>
<td>Installation of Concrete Markers</td>
</tr>
<tr>
<td>May 17, 2011</td>
<td>Preliminary Mapping of WVF</td>
</tr>
<tr>
<td>June 1, 2011</td>
<td>Map Validation of Transected Areas</td>
</tr>
<tr>
<td>June 23, 2011</td>
<td>Rechecking of Coordinates with PHIVOLCS</td>
</tr>
<tr>
<td>Nov. 17, 2011</td>
<td>Final Validation at District II</td>
</tr>
<tr>
<td>Nov. 18, 2011</td>
<td>Final Validation at District III</td>
</tr>
</tbody>
</table>
Quezon City Disaster Risk Reduction and Management Council

TASK FORCE WEST VALLEY FAULT TRENCHING ACTIVITY AT BF PROPERTY AT BRGY. BAGONG SILANGAN (FEB. 17-MARCH 6, 2012)

A project of Quezon City Government, PHIVOLCS-DOST, Geoscience Australia, Australian Aid

West Valley Fault Investigation
SCIENTISTS AT WORK
DO NOT DELAY
TASK FORCE WEST VALLEY FAULT TRENCHING ACTIVITY AT BF PROPERTY AT BRGY. BAGONG SILANGAN (FEB. 17-MARCH 6, 2012)
Evidence of ground displacement include abrupt change of sediment layers across the fault.

Scarp or step like drop of the ground surface across the fault.

More than one earthquake event seems to be indicated in the exposed trench walls.
Quezon City Disaster Risk Reduction and Management Council

MARKING AND INSTALLATION OF CONCRETE MARKERS/SIGNAGE ON AREAS TRAVERSE BY THE WEST VALLEY FAULT

BRGY. BAGONG SILANGAN

BRGY. BATASAN HILLS
ELSAROC (EARTHQUAKE LANDSLIDE SEARCH AND RESCUE ORIENTATION COURSE FOR BRGY. TRANSECTED BY WVF (JANUARY 21-22 2014)

Ugong Norte

- Pansol
- Libis
- Batasan hills
- Loyola Heights
- Bagong Silangan
- St. Ignatius
- Payatas
- Blue Ridge A
- Bagumbuhay
- White Plains
- Commonwealth
- Matandang Balara
Quezon City Disaster Risk Reduction and Management Council

Barangay Emergency Response Team
Quezon City Disaster Risk Reduction and Management Council

Barangay Emergency Response Team B.E.R.T.

DISTRIBUTION OF FIBER GLASS RESCUE BOATS WITH PADDLES, LIFEVEST AND ROPES TO 20 FLOOD PRONE BARANGAYS
July 8, 2013

BOAT HANDLING TRAINING AND QCDRRMC RESCUE BOAT COMPETITION FOR BARANGAYS
June 18, 2013
TOTAL OF 175 PARTICIPANTS
Quezon City Disaster Risk Reduction and Management Council

Junior Rescuer Orientation & Training

2011
Community Risk Assessment conducted in partnership with Center for Disaster Preparedness (CDP) in barangays transected by the West Valley fault. (2014)
Preparedness: Early Warning System (EWS) Installation of Landslide Susceptible permanent marker
## Preparedness: Full implementation of Early Warning System (EWS) protocol

<table>
<thead>
<tr>
<th>Alert Level</th>
<th>Criteria</th>
<th>Interpretation</th>
<th>Required Standard QCDRRMC and BDRRMC Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (yellow) ON CALL ALERT</td>
<td>Rainfall of 7.5mm to 15mm per hour has fallen or expected to fall and most likely to continue for the next 3 hours</td>
<td>Awareness stage, Flooding is Possible in low lying areas and near river channels Water level I River in Alert Level</td>
<td>Hourly monitoring of rainfall and Community awareness. QCDRRMC and All BDRRNC to check all equipments and personnel is in “ON-CALL ALERT STATUS”</td>
</tr>
<tr>
<td>2 (orange) HIGH ALERT</td>
<td>Rainfall of more than 15mm to 30mm per hour has fallen or expected to fall and most likely to continue for the next 3 hours</td>
<td>Preparedness stage Flooding is threatening in low lying areas and near river channels. Water level in Rivers is in Alam Level</td>
<td>Activate QCDRRMC and all BDRRMC’s advise communities to prepare for pre-emptive evacuation Pre position of assets and personnel</td>
</tr>
<tr>
<td>3 (Red) FULL ALERT</td>
<td>Rainfall of more than 30mm within 1 hour has fallen or expected to fall and most likely to continue for the next 3 hours</td>
<td>Evacuation Stage, Community Response Serious flooding is expected Take precautionary measures Water level in rivers is in</td>
<td>mandatory FORCE/FULL Evacuation in Hazard and Combined Areas</td>
</tr>
</tbody>
</table>
Preparedness:

COMMUNICATIONS PROTOCOL

COLLECTIVE STRENGTHENING OF COMMUNITY AWARENESS FOR NATURAL DISASTERS (CSCAND)
PAGASA, PHIVOLCS, MGB, NAMRIA AND OCD

MMDRRMC

Official Reports and Advisories
Collection of scientific Data and indigenous observation

Scientific data collection
And issuances of warning bulletins

MEDIA NETWORKS

QCDRRMC
EOC

142 BDRRMCs

COMMUNITIES
PUBLIC-PRIVATE PARTNERSHIP (EQRPP)
EARTHQUAKE RESPONSE PROGRAM

SIGNING OF THE MEMORANDUM OF AGREEMENT BETWEEN QUEZON CITY GOVERNMENT AND PHILIPPINE INSTITUTE OF CIVIL ENGINEERS (PICE) AND ASSOCIATION OF STRUCTURAL ENGINEERS OF THE PHILIPPINES (ASEP) (NOVEMBER 17, 2014)
PUBLIC-PRIVATE PARTNERSHIP
Center for Disaster Preparedness (CDP)
on CBDRRM programs
Response: Newly constructed state of the art Disaster Risk Reduction and Management Building
Quezon City Disaster Risk Reduction and Management Council

• Response:
Quezon City Disaster Risk Reduction and Management Council

Response: Helping Others: conducted Damage Assessment and Needs Analysis (DANA) at Tacloban, Leyte last November 16-19, 2013 at Leyte Park with House Speaker Sonny Belmonte MMDA Chairman Francis Tolentino and Coun. Ludovica
Response: Helping Others: Humanitarian Mission at the adopted Municipality of Tolosa, Sta Fe, Palompon from Leyte last December 16 to 20, 2013
Response: Helping Others: Quezon City partnered with Gawad Kalinga on Housing Project at Tanauan Leyte last May 16, 2014 with the MMDA and other LGU’s
Recovery and Rehabilitation: Proposed Evacuation Center at Bagong Silangan for Disaster Victims
Quezon City Disaster Risk Reduction and Management Council

Climate Change Adaptation Program: Solar Power of SM North EDSA
Climate Change Adaptation Program: The Pasong Tamo Linear Park led by the Pasig River Rehabilitation Commission. December 10, 2014
Quezon City Disaster Risk Reduction and Management Council

Climate Change Adoption Program: Green House Gas Inventory

Existing GHG Reduction Actions of Quezon City:

<table>
<thead>
<tr>
<th>ENTITY</th>
<th>COMMUNITY</th>
<th>ENTITY/COMMUNITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creation of the Environment Policy Management Council (EPMC)</td>
<td>Biodiversity Profiling Project</td>
<td>Solid Waste Reduction Initiatives</td>
</tr>
<tr>
<td>LED Streetlighting Project</td>
<td>Biogas Emission Reduction Project</td>
<td>Green Building Ordinance</td>
</tr>
<tr>
<td></td>
<td>Ordinance on Open Burning Operations</td>
<td>Greening Program</td>
</tr>
<tr>
<td></td>
<td>Anti-Smoke Belching Operations</td>
<td>Greenhouse Gas Inventory</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* Green Procurement Awareness</td>
</tr>
</tbody>
</table>
1. SP Ordinance No. SP-1560, S-2005 (PO2004-118)

An ordinance mandating that all personnel of Barangay disaster coordinating councils in Quezon City should undergo periodic and refresher courses in safety and disaster prevention and mitigation in order to improve the capability of such councils to immediately address such incidents and problems in their areas of jurisdiction.
Approved Ordinances and Resolutions relative to DRRM:

2. Ordinance No. SP-2290, S-2014
   An ordinance creating the Quezon City Disaster Risk Reduction and Management Office (QCDRRMO), defining its functions, duties and responsibilities, providing for its composition, appropriating funds thereof and for other purposes.
3. Resolution No. SP- 6006, S-2014
   A resolution requesting the City Mayor, Honorable Herbert M. Bautista, to direct the concerned department/office of the Quezon City government who are desiring to be disaster volunteers for accreditation in the Quezon City Disaster Risk Reduction and Management Office and the barangay where the employee-volunteer is residing.

4. Ordinance No. SP- 2262, S-2014
   An Ordinance mandating all private and public school teaching and non-teaching personnel to undergo risk reduction training, pursuant to Republic Act No. 10121, otherwise known as the Philippine Disaster Risk Reduction Management Act of 2010.
Quezon City Disaster Risk Reduction and Management Council

Awarded the Seal of Disaster Preparedness – Level 1 by the DILG-NCR (December 17, 2012)
Quezon City Disaster Risk Reduction and Management Council

MOVING FORWARD

1. EQUIP THE NEWLY CONSTRUCTED DRRM BUILDING WITH STATE OF THE ART FACILITIES IN EMERGENCY MANAGEMENT FOR EFFICIENT SIMULATION OF DISASTER SCENARIOS, EWS AND RESPONSE.

2. INCREASE CAPACITY OF THE QCDRRMC DISASTER ACTION TEAMS IN RESPONDING TO DISASTERS THROUGH TRAINING AND DRILLS.

3. ENHANCE THE PUBLIC AWARENESS IN DISASTER PREPARENESS THROUGH CHILD FRIENDLY AND PWD SENSITIVE COMMUNITY BASED DISASTER RISK REDUCTION AND MANAGEMENT PROGRAMS

4. CONSTRUCT A SAFE AND RESILIENT PERMANENT EVACUATION CENTERS TO SERVE AS TEMPORARY SHELTERS IN TIMES OF CALAMITIES.

5. DEVELOP PROGRAMS IN ADDRESSING CC IMPACTS AND MAINSTREAM DRR AND CCA IN THE CLUP
DEFINITION OF RESILIENCE IN THE CONTEXT OF A DISASTER

- the ability of a system, community or society exposed to hazards to resist, absorb, accommodate and recover from the effects of a hazard in a timely manner, including through the preservation and restoration of its essential basic structures and functions.

-United Nations International Strategy on Disaster Reduction (UNISDR)
Quezon City Disaster Risk Reduction and Management Council

DAMO NGA SALAMAT