

# **MMARAS**

**Metro Manila Accident Reporting and Analysis System**

Annual Report  
January to June 2007

Produced by the Metropolitan Road Safety Unit,  
Traffic Operations Center  
Metropolitan Manila Development Authority (MMDA)

## **Introduction**

The Metro Manila Accident Reporting and Analysis System (MMARAS) is operated by the Metropolitan Road Safety Unit (MRSU) of the MMDA Traffic Operations Center (TOC), with the cooperation and assistance of the Traffic Enforcement Group under National Capital Regional Police Office (TEG-NCRPO) Philippine National Police (PNP). The MMARAS was inaugurated on 01 June 2002.

The objective is to compile and maintain an ongoing database of 'fatal' and 'non-fatal' including the damage to property road accidents, which can indicate areas where safety improvements need to be made. The system will also allow the impact of improvement measures to be monitored.

This report is intended to be an annual analysis of 'fatal', "non-fatal" and "damage to property" road accidents that have been recorded by the PNP accident investigators for the year 2007. The information is presented in graphical and tabular form, which provides a readily identifiable pattern of accident locations and causation patterns. Annual comparisons of traffic accident statistics are also included in this report.

The Metropolitan Road Safety Unit currently has 6 data researchers who gather traffic accident data from different traffic offices and stations of the Traffic Enforcement Group (TEG-NCRPO) within Metro Manila. Previously, only those incidences involving fatal and non-fatal are gathered and encoded at the MMARAS database. But for the year 2005 up to present, we included the damage to property incidence so that we can see the significance and the real picture of what really is happening in our roads and also it gives us additional information in analyzing the causes of accident.

Although influx of traffic accident data increases tremendously, the Metropolitan Road Safety Unit managed to store this damage to property incidences to our MMARAS database and now included in the analysis for the formulation of remedial measures that would be introduced on the identified black spots.

The assistance and cooperation of the traffic investigators will be necessary to maintain an accurate record of the facts surrounding every traffic accident within Metro Manila, since a truly significant picture will only develop over time. The work of the Metropolitan Road Safety Unit will be crucial in providing an appropriate directional thrust in the fight to make the roads of Metro Manila a safer place for everyone.

The Metropolitan Road Safety Unit can be contacted for further information or assistance on Tel: 882-4151-77 loc. 326.

## Compilation of January to June Reports for the Year 2007

### Data Sources

Two data sources are available to the RSU:

- Individual report forms for each accident, gathered by Data Researchers Group of the MRSU from different stations and Districts Offices of the Traffic Enforcement Group; and
- Clippings of road traffic accident from different newspapers and tabloids that is available at the Public Information Office (PIO) of the MMDA.

We cut-off clippings of road traffic accident from different newspapers and tabloids for compilation of the same and reference for under reported incidences. However, only the first are entered into MMARAS, and only these provide the basis for the statistics presented in this report.

### Overall statistics

**Table 1**, shows the number of accidents gathered from January to June 2007 by month.

<b>Month</b>	<b>Damage</b>	<b>Fatal</b>	<b>Non Fatal</b>	<b>Total</b>
January	3,819	37	914	<b>4,770</b>
February	4,012	34	869	<b>4,915</b>
March	4,164	24	879	<b>5,067</b>
April	3,874	21	861	<b>4,756</b>
May	4,313	28	933	<b>5,274</b>
June	4,235	28	956	<b>5,219</b>
<b>Total</b>	<b>24,417</b>	<b>172</b>	<b>5,412</b>	<b>30,001</b>

**Table 2**, shows the number of person killed and injured in road accident for the months of January to June 2007.

	<b>Central</b>	<b>Eastern</b>	<b>Northern</b>	<b>Southern</b>	<b>Western</b>	<b>Total Persons</b>
Fatal	43	33	25	52	23	176
Non-Fatal	2,064	1,340	929	1,922	449	6,704
<b>Total</b>	<b>2,107</b>	<b>1,373</b>	<b>954</b>	<b>1,974</b>	<b>472</b>	<b>6,880</b>

Note that a 'fatal' accident involves at least one person killed, while a 'non-fatal' accident at least one person injured but no fatalities.

**Table 3**, In terms of the number of accidents involved, by accident severity, this translates to:

	Central	Eastern	Northern	Southern	Western	Total incidents
Fatal	42	32	25	50	23	172
Non-Fatal	1,610	1,111	675	1,719	297	5,412
DTP	6,810	5,032	1,660	9,150	1,765	24,417
<b>Total</b>	<b>8,462</b>	<b>6,175</b>	<b>2,360</b>	<b>10,919</b>	<b>2,085</b>	<b>30,001</b>

DTP – Damage to property

**Table 4**, below indicates the distribution of accidents by cities and municipalities in Metro Manila from January – June 2007.

City	Damage	Fatal	Non Fatal Injury	Grand Total	%
Caloocan	1002	16	411	1429	4.76
Las Piñas	1269	3	271	1543	5.14
Makati	3044	10	438	3492	11.64
Malabon	239	2	111	352	1.17
Mandaluyong	1099		76	1175	3.92
Manila	1765	23	297	2085	6.95
Marikina	1096	19	540	1655	5.52
Muntinlupa	1499	5	232	1736	5.79
Navotas	99	2	16	117	0.39
Parañaque	1464	11	251	1726	5.75
Pasay	1100	5	198	1303	4.34
Pasig	2132	10	363	2505	8.35
Pateros	56		18	74	0.25
Quezon	6810	42	1620	8472	28.24
San Juan	717	3	132	852	2.84
Taguig	706	16	301	1023	3.41
Valenzuela	320	5	137	462	1.54
<b>Grand Total</b>	<b>24417</b>	<b>172</b>	<b>5412</b>	<b>30001</b>	<b>100%</b>

On the above table, the municipality of Pateros has the lowest number of incidences for year 2007 from January to June with a percentage share of 0.25% followed by Navotas with 0.39%. **We can now consider these LGU's to be the safest in Metro Manila in terms of road traffic accident is concerned since there have no and or lesser recorded fatal and non-fatal incidence in the MMARAS database up to this date.** This maybe attributed to the following:

- Small land area within NCR
- No major arterial road compared to other cities
- Not considered as Central Business Districts (CBD's)
- Minimal road accidents and
- Manageable traffic direction and control

The City of Quezon dominates all the cities and municipalities of Metro Manila in terms of traffic accident followed by Makati City with a percentage share of 28.24% and 11.64% respectively. This is because of the following several factors:

- Both are Central Business Districts (CBD's) with high social and economic activity.
- Quezon City has the biggest land area (166.2 sq. km) among the cities in Metro Manila.
- It is noted that major thoroughfares such as EDSA, Commonwealth Avenue and C-5 road are located within these cities.

However, problems on traffic accident in Quezon City would be given preference by this unit in conducting road safety audit and providing remedial measures on the “blackspots” or accident prone areas of this city. On this process, traffic accident might reduce in the future.

**Table 5**, shows the **comparisons of accidents** involving fatal and non-fatal incidences excluding the damage to property incidence.

City	year	year	year	year	year	year
	2002	2003	2004	2005	2006	2007
	Jun-Dec	Jan-Dec	Jan-Dec	Jan-Dec.	Jan.-Dec.	Jan.-Jun
Caloocan	96	262	366	755	762	427
Las Pinas	26	142	215	580	502	274
Makati	291	249	335	939	864	448
Malabon	11	6	48	193	174	113
Mandaluyong	45	76	190	426	506	76
Manila	83	56	154	636	702	320
Marikina	36	261	692	820	1068	559
Muntinlupa	16	138	141	411	386	237
Navotas	3	7	25	76	90	18
Paranaque	28	22	223	527	567	262
Pasay	7	48	120	265	341	203
Pasig	227	367	709	839	1043	373
Pateros	0	0	9	56	10	18
Quezon	359	576	1,824	3634	3332	1662
San Juan	0	20	32	99	213	135
Taguig	6	8	28	582	641	317
Valenzuela	28	26	126	347	335	142
<b>Grand Total</b>	<b>1,262</b>	<b>2,264</b>	<b>5,237</b>	<b>11,185</b>	<b>11,536</b>	<b>5,584</b>

### **Known deficiencies**

The concept of collecting traffic accident data was revised by tasking the personnel of the Road Safety Unit data researchers group to gather and copy all those traffic accidents happened in Metro Manila through the available records of every traffic stations instead of letting the Traffic Accident Investigator make their own traffic accident report. This new concept increases the statistics of collected traffic accident data especially for the year 2005 and 2006 (see comparisons above). Data for the years 2005 and 2006 would be more accurate than the previous years

Given the complex mechanism for collecting and gathering road accident data in Metro Manila, and the relatively large number of Traffic Accident Investigators involved, it is inevitable that there will be some data that is missed from the database and these are those under reported incidences. At the present time, however, there is no firm evidence that large numbers of accidents are being omitted because copied data are based from the records on the log book of every traffic stations where traffic accidents (major or minor) have been logged.

### **Data Analysis**

#### Types of person involved

The following tables give a breakdown of the number of persons involved in road accidents during the past year, categorized by:

- Drivers : person driving a mechanically propelled vehicle or riding Pedal cycle
- Passengers : anyone carried in or on a mechanically propelled vehicle
- Pedestrians : anyone traveling on foot.

#### **Fatalities**

<b>District</b>	<b>Drivers Killed</b>	<b>Passengers Killed</b>	<b>Pedestrians Killed</b>	<b>Total Killed</b>
Central	10	6	27	43
Eastern	9	8	16	33
Northern	12	3	10	25
Southern	15	8	29	52
Western	9	0	14	23
<b>Total</b>	<b>55 – 31.25%</b>	<b>25 – 14.20%</b>	<b>96 – 54.55%</b>	<b>176 – 100%</b>

## **Injuries**

<b>District</b>	<b>Drivers Injured</b>	<b>Passengers Injured</b>	<b>Pedestrians Injured</b>	<b>Total Injured</b>
Central	716	738	610	2064
Eastern	592	372	376	1340
Northern	334	310	285	929
Southern	647	487	788	1922
Western	188	192	69	953
<b>Total</b>	<b>2,477-34.36%</b>	<b>2,099-29.12%</b>	<b>2,128-29.52%</b>	<b>7,208-100%</b>

A person involved in a road accident may indicate a driver, a passenger or a pedestrian. Of these types of persons involved, we have recorded 96 pedestrians (54.55%), 55 drivers (31.25%) and 25 passengers (14.20%) that have been killed in road accidents since 01 Jan. up to Jun. 30 2007. Looking into persons injured, 2,477 (34.36%) are drivers, 2,099 (29.12%) passengers and 2,128 (29.52%) pedestrians. The relatively high proportion of driver's and pedestrians killed and injured is a cause for concern.

### Breakdown by time of day

The following table represents the frequency of incidents by time of day. However, there were a number of accidents this year that did not have the time of the incident recorded. These involved eight (8) fatal, four hundred one (401) non-fatal injury and seven hundred two (702) damage to property accidents.

<b>Time (hour)</b>	<b>Damage</b>	<b>Fatal</b>	<b>Non-Fatal Injury</b>	<b>Total Incidents</b>
00	387	4	102	493
01	318	6	129	453
02	339	11	121	471
03	289	3	108	400
04	381	5	126	512
05	434	9	128	571
06	634	5	159	798
07	977	1	216	1194
08	1194	2	247	1443
09	1359	12	279	1650
10	1701	12	271	1984
11	1679	7	297	1983
12	1394	7	300	1701
13	1326	1	236	1563
14	1516	9	256	1781
15	1648	5	275	1928
16	1498	6	304	1808
17	1276	6	313	1595
18	933	9	253	1195
19	1185	8	246	1439
20	1014	12	261	1287
21	1016	6	240	1262
22	846	11	214	1071
23	656	10	179	845
(blank)	417	5	152	<b>574 - 01.91%</b>
<b>Grand Total</b>	<b>24417</b>	<b>172</b>	<b>5412</b>	<b>30,001 – 100.00%</b>
<b>Day-time (6:00-18:00)</b>	<b>16,501-55.00%</b>	<b>82–00.27%</b>	<b>3,406–11.35%</b>	<b>20,623 – 68.74%</b>
<b>Night-time (18:00 – 6:00)</b>	<b>7,916-26.39%</b>	<b>90–00.29%</b>	<b>2,006-6.69%</b>	<b>9,378 – 31.26%</b>

Overall, about 31.26% of accidents occurred during the hours of darkness, while 68.74% occurred during the daytime and 1.91% without time indicated. It can be observed that most of the accidents occurred at daytime but Fatal and Non Fatal accidents are considered high with 168 incidents (0.96%) and 3,761 (21.44%) respectively during night-time and wee hours in the morning. Drivers and Pedestrians are advised to be cautious and attentive during this hours.



## **On-going Activities / Plans of the MRSU**

- **Intensified Data Collection**  
Good accident record is vital in analyzing and devising appropriate solutions / remedial measures to accident-prone locations. The MRSU Data Researchers Group has been working to further improve the collection of accident data on 'fatal' and 'non-fatal' accidents including the damage to property accidents.
- **Inspection of Accident Sites**  
The MRSU has prepared a schedule for the ocular inspection of accident-prone locations to gather more information that would be useful in evaluating accident sites. Three to four accident locations will be visited on a weekly basis.
- **Road Safety Audit**  
Road safety features, or lack of it, at selected locations will be identified and appropriate remedial actions will be developed. Engineering measures will be developed for five accident locations every quarter of the year.
- **On- Going Training of Technical Staff**  
A lot of on the job training will be undertaken for the new technical staff to developed their knowledge and skills in this new kind of work and endeavor.
- **Revision of MMARAS Form and the Database**  
It is a must to revise the MMARAS Form and the Database to incorporate the other data needed in the analysis of traffic accident.
- **Acquire Additional Equipment / Technical Personnel**  
It is important to acquire additional equipment such as service vehicle, computers, digital cameras, printer, and other office supplies that enables the unit to perform their assigned tasks well. MRSU also needs to have an Engineer that will head the Road Safety Audit group.