

# **MMARAS**

**Metro Manila Accident Recording and Analysis System**

Traffic Accident Report  
January to December 2013

Produced by the Road Safety Unit (RSU)  
Traffic Discipline Office-Traffic Engineering Center (TDO-TEC)  
Metropolitan Manila Development Authority (MMDA)

## **Introduction**

The Metro Manila Accident Reporting and Analysis System (MMARAS) is operated by the Road Safety Unit (RSU) of the MMDA-Traffic Discipline Office-Traffic Engineering Center (MMDA-TDO-TEC), with the cooperation and assistance of the Traffic Enforcement Group under National Capital Regional Police Office (TEG-NCRPO) Philippine National Police (PNP).

The objective is to compile and maintain an on-going database of Fatal, Non Fatal Injury and Damage to Property road crashes, which can indicate areas where safety improvements are need to be made. The system will also allow the impact of improvement measures that needs to be monitored.

This report is intended to be a quarterly analysis of 'Fatal', "Non Fatal' and 'Damage to Property' road crashes that have been recorded by the PNP Traffic Accident Investigators for the year 2013. The information is presented in tabular form, which provides a readily identifiable pattern of accident locations and causation patterns.

The Road Safety Unit currently has 8 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 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 Road Safety Unit will be crucial in providing an appropriate directional trust 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: 882-4151-57 loc. 297.

## Compilation of January to December Reports for the Year 2013

### Data Sources

Two data sources are available to the RSU:

- Individual report forms for each accident, gathered by Data Researchers Group of the RSU 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 office of the Public Affairs Service (PAS) 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 road crash incidents/cases gathered and compiled from January to December 2013, classified by month.

Month	Fatal	Non Fatal Injury	Damage to Property	Grand Total
January	35	1467	5341	6843
February	30	1348	5497	6875
March	33	1398	5893	7324
April	34	1383	5716	7133
May	41	1312	6004	7357
June	32	1344	5510	6886
July	39	1497	5956	7492
August	31	1418	5840	7289
September	39	1340	6033	7412
October	23	1427	5568	7018
November	40	1401	6044	7485
December	34	1405	6012	7451
<b>Grand Total</b>	<b>411</b>	<b>16,740</b>	<b>69,414</b>	<b>86,565</b>
<b>Ave. Accident Rate Per Day</b>	<b>1.13 per day</b>	<b>45.86 per day</b>	<b>190.17 per day</b>	<b>237.16 or 238 per day</b>

**Table 2.** Shows the actual number of persons killed and injured in a road crash for the months of January to December 2013.

	Central	Eastern	Northern	Southern	Western	Total Persons
Fatal	147	45	66	114	53	425
Non Fatal	7024	3017	3817	6459	1263	21,580
<b>Total</b>	<b>7,171</b>	<b>3,062</b>	<b>3,883</b>	<b>6,573</b>	<b>1,316</b>	<b>22,005</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.** Shows the number of road crash incidents/cases by Accident Severity and District, this translates to:

	<b>Central</b>	<b>Eastern</b>	<b>Northern</b>	<b>Southern</b>	<b>Western</b>	<b>Total</b>
Fatal	141	39	65	110	56	411
Non Fatal	5154	2491	2919	5188	988	16,740
DTP	21346	12074	5233	23232	7529	69414
<b>Total</b>	<b>26,641</b>	<b>14,604</b>	<b>8,217</b>	<b>28,530</b>	<b>8,573</b>	<b>86,565</b>

DTP – Damage To Property

**Table 4.** Below indicates the distribution of accidents by cities and municipalities in Metro Manila from January – December 2013.

<b>City</b>	<b>Fatal</b>	<b>Non Fatal Injury</b>	<b>Damage</b>	<b>Grand Total</b>
Caloocan	37	1092	2605	3734
Las Piñas	9	733	2594	3336
<b>Makati</b>	<b>23</b>	<b>968</b>	<b>7323</b>	<b>8314</b>
<b>Malabon</b>	<b>4</b>	<b>384</b>	<b>606</b>	<b>994</b>
Mandaluyong	8	422	3124	3554
<b>Manila</b>	<b>56</b>	<b>988</b>	<b>7529</b>	<b>8573</b>
Marikina	17	1005	2169	3191
Muntinlupa	13	996	2386	3395
<b>Navotas</b>	<b>6</b>	<b>351</b>	<b>521</b>	<b>878</b>
Parañaque	25	991	3279	4295
Pasay	15	583	3610	4208
Pasig	13	945	5526	6484
<b>Pateros</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>10</b>
<b>Quezon</b>	<b>141</b>	<b>5154</b>	<b>21346</b>	<b>26641</b>
San Juan	1	119	1255	1375
Taguig	25	917	4030	4972
Valenzuela	18	1092	1501	2611
<b>Grand Total</b>	<b>411</b>	<b>16,740</b>	<b>69,414</b>	<b>86,565</b>

On the table no. 4, the municipality of Pateros has the lowest number of incidences for the year 2013 from January to December, followed by Navotas and Malabon. We can now consider these LGU's to be the safest in Metro Manila in terms of road crash incident is concerned, since they have lesser recorded fatal, non-fatal and damage to property incidences in the MMARAS database up to this date. This maybe attributed to the following:

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

On the other hand, the City of Quezon dominates all the cities and municipalities of Metro Manila in terms of fatal road traffic accident followed by City of Manila and then Makati. 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, so as with the City of Makati and Manila.
- It is noted that 5 on the 7 major thoroughfares such as EDSA, Commonwealth Ave., Quezon Ave., Roxas Blvd. and Radial Road 10 are located within these cities.

However, problems on road traffic accident in the entire Metropolitan Manila would be given preference by this agency in providing remedial measures on the "blackspots" or accident-prone areas. On this process, traffic accident might be reducing in the future.

## **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 and be submitted in this office. This new concept increases the statistics of collected road traffic accident data, especially for the year 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012 and now 2013.

Given the complex mechanism for collecting and gathering of 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 actual number of persons involved in a road crash, categorized by:

- Drivers : person driving a mechanically propelled vehicle or riding a 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	57	24	66	147
Eastern	17	13	15	45
Northern	29	7	30	66
Southern	54	15	45	114
Western	16	6	31	53
<b>Total</b>	<b>173 (40.71%)</b>	<b>65 (15.29%)</b>	<b>187 (44.00%)</b>	<b>425 (100%)</b>

## Injuries

District	Drivers Injured	Passengers Injured	Pedestrians Injured	Total Injured
Central	2857	2550	1617	7,024
Eastern	1113	937	967	3,017
Northern	1487	1056	1274	3,817
Southern	2594	1685	2180	6,459
Western	459	385	419	1,263
<b>Total</b>	<b>8,510 (39.43%)</b>	<b>6,613 (30.64%)</b>	<b>6,457 (29.92%)</b>	<b>21,580 (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 187 pedestrians (44%), 173 drivers (40.71%) and 65 passengers (15.29%) that have been killed in road accidents since January up to December 2013. Looking into persons injured, 8,510 (39.43%) are drivers, 6,613 (30.64%) passengers and 6,457 (29.92%) 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 twenty (20) fatal, six hundred and forty (640) non-fatal injury and one thousand five hundred and eighty-five (1585) damage to property accidents.

<b>Time Hour</b>	<b>Fatal</b>	<b>Non Fatal Injury</b>	<b>Damage</b>	<b>Grand Total</b>
00:00-00:59	21	351	823	1195
01:00-01:59	27	388	1056	1471
02:00-02:59	26	357	934	1317
03:00-03:59	26	340	935	1301
04:00-04:59	19	374	997	1390
05:00-05:59	26	550	1224	1800
06:00-06:59	13	731	1982	2726
07:00-07:59	16	846	3041	3903
08:00-08:59	13	852	3301	4166
09:00-09:59	12	778	3531	4321
10:00-10:59	9	814	4218	5041
11:00-11:59	14	806	4569	5389
12:00-12:59	6	794	3838	4638
13:00-13:59	9	722	3578	4309
14:00-14:59	12	685	4164	4861
15:00-15:59	9	824	4396	5229
16:00-16:59	13	838	4107	4958
17:00-17:59	8	911	3437	4356
18:00-18:59	23	690	3149	3862
19:00-19:59	10	800	3952	4762
20:00-20:59	15	735	3322	4072
21:00-21:59	23	669	2765	3457
22:00-22:59	18	660	2503	3181
23:00-23:59	23	585	2007	2615
No Time Indicated	20	640	1585	2245
<b>Grand Total</b>	<b>411</b>	<b>16,740</b>	<b>69,414</b>	<b>86,565</b>
<b>Day-time (06:00-17:55)</b>	<b>134 (00.15%)</b>	<b>9,601 (11.09%)</b>	<b>44,162 (51.02%)</b>	<b>53,897 (62.26%)</b>
<b>Night-time (18:00-05:55)</b>	<b>277 (00.32%)</b>	<b>7,139 (08.25%)</b>	<b>25,252 (29.17%)</b>	<b>32,668 (37.74%)</b>

Overall, 32,668 or 37.74% of accidents occurred during the hours of darkness and without time indicated, while the 53,897 or 62.26% occurred during daytime. But, it can be observed that eventhough most of the accidents occurred at daytime, fatal accidents are considered high during night-time and wee hours in the morning. Drivers, Passengers and Pedestrians are advised to be cautious and attentive during these particular hours.

## Breakdown of vehicle types involved in accidents

The classification of vehicle types within MMARAS is as follows:

- Cycle/Pedicab : human-powered vehicle
- Motorcycle : two-wheeled mechanically propelled Vehicle
- Motor Tricycle : three-wheeled passenger-carrying mechanically propelled vehicle
- Car : privately-owned mechanically propelled vehicle, which included all forms of 'Private use' small passenger-carrying vehicle.
- Jeepney/Taxi/Fx/Bus : mechanically-propelled vehicle which carries passengers on payment of a fee.
- Van : small vehicle for carrying goods
- Truck : large vehicle for carrying goods

The following table indicated the actual distribution of number of vehicles involved in a road crash from January to December 2013:

Vehicle Type	Fatal	Non Fatal Injury	Damage to Property	Total No. of Vehicles
Cycle-Pedicab	20	834	491	1,345
<b>Motorcycle</b>	<b>194</b>	<b>10554</b>	<b>9524</b>	<b>20,272</b>
Motor Tricycle	17	1616	2191	3,824
<b>Car</b>	<b>127</b>	<b>6275</b>	<b>73516</b>	<b>79,918</b>
<b>Jeepney</b>	<b>51</b>	<b>2452</b>	<b>9350</b>	<b>11,853</b>
Taxi / Fx	20	1887	11961	13,868
Bus	27	725	5683	6,435
Van	18	627	5396	6,041
<b>Truck</b>	<b>97</b>	<b>1185</b>	<b>11714</b>	<b>12,996</b>
Train	2	4	5	11
Kuliglig	-	-	-	0
Animal-drawn vehicle	-	-	-	0
Push Cart	-	-	-	0
Heavy Equipment	-	-	-	0
Unknown Vehicle	27	984	6021	7,032
<b>TOTAL</b>	<b>600</b>	<b>27,143</b>	<b>135,852</b>	<b>163,595</b>

On the table shown before this page, motorcycles have the highest fatality accident rate with 194 involved, then followed by cars with 127 and trucks with 97 total. For non fatal incidents, Motorcycles still have the highest rate with 10,554 shares and followed by cars with 6,275 and PUJ's with 2,452. While for damage to property cars have the highest rate with 73,516 and followed by FXTaxi/Taxi's with 11,961 and trucks with 11,714 total.

## Accident Causations

Accident Factor	Fatal	Non Fatal Injury	Damage to Property	Grand Total
Human Error		6	10	16
Human Error (Alcohol suspected)		35	29	64
Human Error (Avoided Hitting Animal)		1	1	2
Human Error (Avoided Hitting Another Vehicle / Lost Control due to Slippery Road)			1	1
Human Error (Avoided Hitting Another Vehicle)		7	14	21
Human Error (Avoided Hitting Pedestrian)		2	18	20
Human Error (Avoided Hitting Road Construction)		1		1
Human Error (Bad overtaking)		1	1	2
Human Error (Bad turning)			12	12
Human Error (Counterflow)		1		1
Human Error (Cut by Another Vehicle)			1	1
Human Error (Driver Error)	11	682	1521	2214
Human Error (Hit by Opened Door)			2	2
Human Error (Hit by Side Mirror as Person Alights)		1		1
Human Error (Lost Control)	5	71	44	120
Human Error (Moving Backwards/Backing Inattentively)	1	2	45	48
Human Error (Playing while Hanging on the Veh., PUJ)		1		1
Human Error (Sudden Stop)		2		2
Human Error (Tired/Asleep)		7	6	13
Human Error (Too fast)	2	1		3
Human Error (Victim Jumped Off the Truck)	1			1
No Accident Factor (based on Police Blotter Book)	390	15893	67670	83953
Other (Door Suddenly Opens)		1		1
Other (Driver Suffered from Stroke)	1			1
Other (Road Defect)			2	2
Other (Road Repair)			1	1
Other (Runover a Path Hole)		5		5
Other (Runover a piece of Solid Object, Steel)			1	1
Other (Scattered Debris/Objects)		1		1
Other (Slippery Road)		5	1	6
Other (Stampede Due to Fake Explosion)		1		1
Other (Tire was Burnt)		1		1
Other (Vehicle Moved Backwards)		1		1
Vehicle Defect			7	7
Vehicle Defect (Lost Brake)		9	12	21
Vehicle Defect (Malfunction)			1	1
Vehicle Defect (Mechanical)		1	7	8
Vehicle Defect (Tire Detached)			3	3
Vehicle Defect (Tire Exploded)		1	4	5
<b>Grand Total</b>	<b>411</b>	<b>16,740</b>	<b>69,414</b>	<b>86,565</b>

## **Top Five (5) Accident Causations**

- (1) Driver Error / Human Error**
- (2) Lost Control**
- (3) Alcohol suspected**
- (4) Moving Backwards/Backing Inattentively**
- (5) Bad turning**

MMDA has been coming up with solutions to solve the problem in Road Safety, almost all of the Authority's projects are geared towards Public Safety. Pedestrians facilities and signage's are designed to promote safety and convenience, Footbridges has been put up at major choke points where pedestrian volume is high, Sidewalk clearing operations intensified, geometric improvements at accident prone areas undertaken among others. Road Safety is a global concern, and the task to lessen the number of traffic accidents is a high objective but possible with the cooperation and support of the public.

## Accident Prone Stretches

Based on the MMARAS database, by means of cross table querying, there are also numbers of accidents prone stretches in every district. And these stretches are:

<b>District</b>	<b>Location</b>
<b>Northern</b>	
<b>Caloocan</b>	Quirino Highway; Rizal Avenue Extension
<b>Malabon</b>	C-4 Road; Gov. Pascual Ave.; M. H. Del Pilar St.; McArthur Highway
<b>Navotas</b>	Honorio Lopez Blvd., Radial Road 10; Gov. Pascual Ave.; M. Naval St.
<b>Valenzuela</b>	Maysan Road; McArthur Highway
<b>Southern</b>	
<b>Makati</b>	EDSA; Pres. Sergio Osmeña Highway; Buendia Ave.
<b>Las Piñas</b>	Alabang-Zapote Road; Real St.; Marcos Alvarez Ave.
<b>Muntinlupa</b>	West Service Road; National Highway: Alabang-Zapote Road
<b>Parañaque</b>	West Service Road; Roxas Blvd.; Ninoy Aquino Ave.; Dr. A. Santos Ave.
<b>Pasay</b>	EDSA; Buendia Ext.; Roxas Blvd.
<b>Taguig</b>	Carlos P. Garcia Ave. (C-5); M. L. Quezon St.; East Service Road
<b>Pateros</b>	M. Almeda St.; P. Herrera St.
<b>Eastern</b>	
<b>Marikina</b>	Marcos Highway; Sumulong Highway
<b>Mandaluyong</b>	EDSA; Shaw Blvd.
<b>Pasig</b>	Ortigas Ave.; E. Rodriguez Jr. Ave.; Marcos Highway; Julia Vargas
<b>San Juan</b>	Ortigas Ave.; EDSA; Santolan Road; P. Guevarra St.; N. Domingo St.
<b>Western</b>	
<b>Manila</b>	Pres. Sergio Osmeña Highway; Radial Road 10; Roxas Blvd.
<b>Central</b>	
<b>Quezon</b>	Commonwealth Ave.; EDSA; Quirino Highway; Quezon Ave.; Katipunan Ave.

Note:

There are still other accident-prone stretches aside from the above stated stretches.

## **SAFETY MEASURES**

1. Installation of “Pedestrian Footbridges” along Metro Manila’s major thoroughfares or major choke points wherein pedestrian volume is high.
2. Improvement of Sidewalks, to encourage pedestrian to pass thru.
3. Installation of various Traffic Facilities (gantry, signages, barriers, see-thru fence, etc.) to promote safety and convenience.
4. Application of “Lane Markings”, for both vehicles and pedestrians.
5. Installation of “Reflectorized Sash Stickers” on concrete barriers to be easily recognized by motorists especially during night time.
6. Installation of Steel Barriers along the sidewalks to separate vehicles from pedestrians.
7. Strict enforcement of road violations by the various Traffic Enforcement Units.

**Updated (April 3, 2014)**

**Source : Metro Manila Accident Recording and Analysis System (MMARAS) Database  
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