

MMARAS

Metro Manila Accident Recording and Analysis System

Traffic Accident Report
January to December 2014

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 Recording and Analysis System (MMARAS) is created and 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 Unit (TEU) of the 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 provide brief information on 'Fatal', 'Non Fatal Injury' and 'Damage to Property' road crashes that have been recorded by the MMDA-Road Safety Unit thru the Police Blotter of the PNP for the year 2014. 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 Units (TEU) 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 2014

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 Unit; and
- Recorded road crashes at MMDA's Metrobase thru radio calls, concerned citizen calls and captured by CCTV's.

We also get the recorded road crashes from the MMDA's Metrobase but only the first are entered into MMARAS Database, 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 2014, classified by month.

Month	Fatal	Non Fatal Injury	Damage to Property	Grand Total
January	32	1,424	5,487	6,943
February	34	1,283	5,436	6,753
March	31	1,366	6,071	7,468
April	27	1,221	5,602	6,850
May	34	1,315	6,196	7,545
June	34	1,328	5,863	7,225
July	38	1,347	6,247	7,632
August	33	1,376	6,490	7,899
September	27	1,313	6,320	7,660
October	35	1,499	6,756	8,290
November	47	1,605	6,339	7,991
December	46	1,588	6,368	8,002
Grand Total	418	16,665	73,175	90,258
Ave. Accident Rate Per Day	1.14 per day	45.66 per day	200.48 per day	247.28 or 248 per day

Table 2. Shows the actual number of persons killed and injured in a road crash for the months of January to December 2014.

	Central	Eastern	Northern	Southern	Western	Total Persons
Fatal	127	48	63	127	79	444
Non Fatal	5,790	2,767	3,856	6,905	1,583	20,901
Total	5,917	2,815	2,919	7,032	1,662	21,345

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:

	Central	Eastern	Northern	Southern	Western	Total
Fatal	118	44	61	117	78	418
Non Fatal	4,488	2,266	2,951	5,631	1,329	16,665
DTP	22,285	13,334	5,072	23,897	8,577	73,175
Total	26,891	15,644	8,084	29,645	9,984	90,258

DTP – Damage To Property

Table 4. Below indicates the distribution of accidents by cities and municipalities in Metro Manila from January – December 2014.

City	Fatal	Non Fatal Injury	Damage	Grand Total
Caloocan	21	1,149	2,341	3,511
Las Piñas	14	1,011	2,337	3,362
Makati	17	1,018	7,825	8,860
Malabon	5	423	536	964
Mandaluyong	11	540	3,540	4,091
Manila	78	1,329	8,577	9,984
Marikina	17	577	1,537	2,131
Muntinlupa	10	937	2,518	3,465
Navotas	9	299	513	821
Parañaque	33	1,172	3,752	4,957
Pasay	9	627	3,460	4,096
Pasig	16	879	6,840	7,735
Pateros	-	20	40	60
Quezon	118	4,488	22,285	26,891
San Juan	-	270	1,417	1,687
Taguig	34	846	3,975	4,855
Valenzuela	26	1,080	1,682	2,788
Grand Total	418	16,665	73,175	90,258

On the table no. 4, the municipality of Pateros has the lowest number of incidences for the year 2014 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, from year 2005-2013 and now 2014.

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

District	Drivers Killed	Passengers Killed	Pedestrians Killed	Total Killed
Central	48	20	59	127
Eastern	22	6	20	48
Northern	26	14	23	63
Southern	62	23	42	127
Western	19	8	52	79
Total	177 (39.86%)	71 (16.00%)	196 (44.14%)	444 (100%)

Injuries

District	Drivers Injured	Passengers Injured	Pedestrians Injured	Total Injured
Central	2373	1890	1527	5,790
Eastern	1158	777	832	2,767
Northern	1592	1016	1248	3,856
Southern	3134	1649	2122	6,905
Western	614	395	574	1,583
Total	8,871 (42.44%)	5,727 (27.40%)	6,303 (30.16%)	20,901 (100%)

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 196 pedestrians (44.14%), 177 drivers (39.86%) and 71 passengers (16.00%) that have been killed in road accidents since January up to December 2014. Looking into persons injured, 8,871 (42.44%) are drivers, 5,727 (27.40%) passengers and 6,303 (30.16%) 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 seven (7) fatal, four hundred and fifty-four (454) non-fatal injury and one thousand three hundred and thirty-six (1336) damage to property accidents.

Time Hour	Fatal	Non Fatal Injury	Damage	Grand Total
00:00-00:59	12	372	986	1,370
01:00-01:59	23	393	1,128	1,544
02:00-02:59	29	408	1,021	1,458
03:00-03:59	21	346	968	1,335
04:00-04:59	25	401	1,129	1,555
05:00-05:59	16	545	1,348	1,909
06:00-06:59	16	735	2,220	2,971
07:00-07:59	8	984	3,261	4,253
08:00-08:59	11	862	3,489	4,362
09:00-09:59	19	798	3,637	4,454
10:00-10:59	8	775	4,367	5,150
11:00-11:59	11	791	4,557	5,359
12:00-12:59	16	737	4,046	4,799
13:00-13:59	14	690	3,953	4,657
14:00-14:59	13	726	4,611	5,350
15:00-15:59	13	778	4,539	5,330
16:00-16:59	20	797	4,062	4,879
17:00-17:59	12	859	3,692	4,563
18:00-18:59	24	710	3,385	4,119
19:00-19:59	17	769	4,047	4,833
20:00-20:59	19	762	3,514	4,295
21:00-21:59	18	717	2,818	3,553
22:00-22:59	23	657	2,724	3,404
23:00-23:59	23	599	2,337	2,959
No Time Indicated	7	454	1,336	1,797
Grand Total	418	16,665	73,175	90,258
Day-time (06:00-17:55)	161 (00.18%)	9,532 (10.56%)	46,434 (51.45%)	56,127 (62.19%)
Night-time (18:00-05:55)	257 (00.28%)	7,133 (07.90%)	26,741 (29.63%)	34,131 (37.81%)

Overall, 34,131 or 37.81% of accidents occurred during the hours of darkness and without time indicated, while the 56,127 or 62.19% 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 2014:

Vehicle Type	Fatal	Non Fatal Injury	Damage to Property	Total No. of Vehicles
Cycle-Pedicab	17	939	457	1,413
Motorcycle	204	10,735	9,576	20,515
Motor Tricycle	18	1,434	2,143	3,595
Car	92	6,119	72,759	78,970
Jeepney	45	2,222	8,839	11,106
Taxi / Fx	24	1,618	10,869	12,511
Bus	24	661	5,581	6,266
Van	36	1,211	12,683	13,930
Truck	125	1,265	13,798	15,188
Train	9	8	2	19
Kuliglig	1	11	30	42
Animal-drawn vehicle	-	-	2	2
Heavy Equipment	-	1	3	4
Unknown Vehicle	33	954	7,265	8252
TOTAL	628	27,178	144,007	171,813

On the table shown before this page, motorcycles have the highest fatality accident rate with 204 involved, then followed by trucks with 125 and cars with 92 total. For non fatal incidents, Motorcycles still have the highest rate with 10,735 shares and followed by cars with 6,119 and PUJ's with 2,222. While for damage to property cars have the highest rate with 72,759 and followed by trucks with 13,801 and vans with 12,683 total.

Collision Types

Collision Type	Fatal	Non Fatal Injury	Damage to Property	Grand Total
Angle Impact	8	742	3429	4179
Head-on	3	164	253	420
Hit and Run	41	810	3914	4765
Hit Object	19	187	1587	1793
Hit Parked Vehicle	2	56	1792	1850
Hit Pedestrian	148	5257	NA	5405
Multiple Collision	7	330	1247	1584
No Collision Stated (based on Police Blotter Book)	116	6406	36663	43185
Other	20	319	148	487
Rear-end	10	807	9940	10757
Self-Accident	31	455	706	1192
Side Swipe	13	1132	13496	14641
Grand Total	418	16,665	73,175	90,258

Breakdown of Hit and Run Collision Incidences	Fatal	Non Fatal Injury	Damage to Property	Grand Total
Hit and Run (Angle Impact)	-	21	142	163
Hit and Run (Head-on)	-	1	2	3
Hit and Run (Hit Parked Vehicle)	-	-	241	241
Hit and Run (Hit Pedestrian)	28	355	NA	383
Hit and Run (No Collision Stated)	10	351	2834	3195
Hit and Run (Rear-end)	1	15	200	216
Hit and Run (Side Swipe)	2	67	495	564
Grand Total	41	810	3,914	4,765

Top Collision Types

1. Side Swipe Collisions
2. Rear-end Collisions
3. Hit Pedestrian
4. Hit and Runs
5. Angle Impact Collisions

Accident Causations

Accident Factor	Fatal	Non Fatal Injury	Damage to Property	Grand Total
Human Error	-	53	195	248
Human Error (Alcohol suspected)	1	15	21	37
Human Error (Avoided a Path Hole)	-	1	-	1
Human Error (Avoided Hitting Animal)	-	1	1	2
Human Error (Avoided Hitting Another Vehicle)	-	10	8	18
Human Error (Avoided Hitting Pedestrian)	-	2	14	16
Human Error (Moving Backwards/Backing Inattentively)	-	1	30	31
Human Error (Counterflow)	-	1	-	1
Human Error (Cut by Another Vehicle)	-	1	1	2
Human Error (Driver Error)	-	11	24	35
Human Error (Inattentive)	-	-	2	2
Human Error (Leg Accidentally Hooked in the Water Meterbase)	-	1	-	1
Human Error (Lost Control)	6	21	17	44
Human Error (Tired/Asleep)	-	1	2	3
Human Error (Too close)	10	807	9940	10,757
Human Error (Too fast)	-	1	-	1
No Accident Factor (based on Police Blotter Book)	399	15,710	62,896	79,005
Other (Driver Suffered from Heart Attack while Driving)	1	-	-	1
Other (Due to Scattered Objects)	-	9	1	10
Other (Road Condition)	-	-	2	2
Other (Slipped)	-	2	-	2
Other (Slippery Road)	-	5	3	8
Vehicle Defect (Bike Part Broke)	-	1	-	1
Vehicle Defect (Lost Brakes)	1	3	8	12
Vehicle Defect (Mechanical)	-	7	6	13
Vehicle Defect (Tire Exploded/Blownout Tire)	-	1	4	5
Grand Total	418	16,665	73,175	90,258

Three (3) Accident Causations

1. Human Error
2. Other
3. Vehicle Defect

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:

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

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

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