MMARAS

Metro **M**anila **A**ccident **R**ecording and **A**nalysis **S**ystem

Traffic Accident Report
January to December 2015

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 2015. 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 2015

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 2015, classified by month.

Month	Fatal	Non Fatal Injury	Damage to Property	Grand Total
January	46	1,377	5,491	6,914
February	52	1,414	5,895	7,361
March	42	1,652	6,448	8,142
April	35	1,440	5,838	7,313
May	43	1,427	6,352	7,822
June	39	1,363	6,474	7,876
July	36	1,428	6,641	8,105
August	40	1,370	6,869	8,279
September	50	1,351	7,115	8,516
October	47	1,460	7,204	8,711
November	40	1,361	6,463	7,864
December	49	1,460	7,203	8,712
Grand Total	**519**	**17,103**	**77,993**	**95,615**
Ave. Accident Rate Per Day	**1.42 per day**	**46.86 per day**	**213.68 per day**	**261.96 or 262 per day**

Table 2. Shows the actual number of persons killed and injured in a road crash for the months of January to December 2015.

	Central	Eastern	Northern	Southern	Western	Total Persons
Fatal	151	62	92	145	86	536
Non Fatal	5,970	3,992	3,190	7,161	1,545	21,858
Total	**6,121**	**4,054**	**3,282**	**7,306**	**1,631**	**22,394**

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	146	58	93	139	83	519
Non Fatal	4,466	3,126	2,481	5,692	1,338	17,103
DTP	22,917	13,846	5,169	26,381	9,680	77,993
Total	**27,529**	**17,030**	**7,743**	**32,212**	**11,101**	**95,615**

DTP – Damage To Property

Table 4. Below indicates the distribution of accidents by cities and municipalities in Metro Manila from January – December 2015.

City	Fatal	Non Fatal Injury	Damage	Grand Total
Caloocan	43	1,130	2,933	4,106
Las Piñas	24	1,035	2,357	3,416
Makati	**19**	**969**	**9,185**	**10,173**
Malabon	**5**	**418**	**672**	**1,095**
Mandaluyong	7	500	3,715	4,222
Manila	**83**	**1,338**	**9,680**	**11,101**
Marikina	26	985	2,596	3,607
Muntinlupa	21	966	2,807	3,794
Navotas	**12**	**211**	**507**	**730**
Parañaque	26	1,183	3,730	4,939
Pasay	10	712	4,236	4,958
Pasig	23	1,375	6,199	7,597
Pateros	**-**	**4**	**27**	**31**
Quezon	**146**	**4,466**	**22,917**	**27,529**
San Juan	2	266	1,336	1,604
Taguig	39	823	4,039	4,901
Valenzuela	33	722	1,057	1,812
Grand Total	**519**	**17,103**	**77,993**	**95,615**

On the table no. 4, the municipality of Pateros has the lowest number of incidences for the year 2015 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 may be 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 2005-2014 and now 2015.

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	67	23	61	151
Eastern	25	14	23	62
Northern	48	11	33	92
Southern	65	14	66	145
Western	27	7	52	86
Total	**232 (43.28%)**	**69 (12.87%)**	**235 (43.84%)**	**536 (100%)**

Injuries

District	Drivers Injured	Passengers Injured	Pedestrians Injured	Total Injured
Central	2756	1957	1257	5,970
Eastern	2024	1150	818	3,992
Northern	1382	827	981	3,190
Southern	3469	1739	1953	7,161
Western	710	339	496	1,545
Total	**10,341 (47.31%)**	**6,012 (27.50%)**	**5,505 (25.19%)**	**21,858 (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 235 pedestrians (43.84%), 232 drivers (43.28%) and 69 passengers (12.87%) that have been killed in road accidents since January up to December 2015. Looking into persons injured, 10,341 (47.31%) are drivers, 6,012 (27.50%) passengers and 5,505 (25.19%) pedestrians. The relatively high proportion of drivers 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 ten (10) fatal, two hundred and thirty-seven (237) non-fatal injury and eight hundred and eight (808) damage to property accidents.

Time Hour	Fatal	Non Fatal Injury	Damage	Grand Total
00:00-00:59	23	350	1000	1,373
01:00-01:59	35	424	1188	1,647
02:00-02:59	33	402	1100	1,535
03:00-03:59	32	402	985	1,419
04:00-04:59	31	453	1149	1,633
05:00-05:59	31	596	1477	2,104
06:00-06:59	21	776	2256	3,053
07:00-07:59	20	956	3363	4,339
08:00-08-59	19	920	3590	4,529
09:00-09:59	21	858	3851	4,730
10:00-10:59	16	801	4629	5,446
11:00-11:59	10	795	4793	5,598
12:00-12:59	18	780	4549	5,347
13:00-13:59	11	737	4208	4,956
14:00-14:59	24	728	4947	5,699
15:00-15:59	15	830	4958	5,803
16:00-16:59	21	921	4492	5,434
17:00-17:59	9	835	3826	4,670
18:00-18:59	18	758	3627	4,403
19:00-19:59	21	787	4589	5,397
20:00-20:59	10	719	3805	4,534
21:00-21:59	13	704	3157	3,874
22:00-22:59	28	668	2985	3,681
23:00-23:59	29	666	2661	3,356
No Time Indicated	10	237	808	1,055
Grand Total	**519**	**17,103**	**77,993**	**95,615**
Day-time (06:00-17:55)	**205 (00.21%)**	**9,937 (10.39%)**	**49,462 (51.73%)**	**59,604 (62.33%)**
Night-time (18:00-05:55)	**314 (00.33%)**	**7,166 (07.49%)**	**28,531 (29.84%)**	**36,011 (37.66%)**

Overall, 36,011 or 37.66% of accidents occurred during the hours of darkness and without time indicated, while the 59,604 or 62.33% 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 2015:

Vehicle Type	Fatal	Non Fatal Injury	Damage to Property	Total No. of Vehicles
Cycle-Pedicab	26	940	374	1,340
Motorcycle	***262***	***11,620***	8,401	***20,283***
Motor Tricycle	29	1,524	2,113	3,666
Car	***125***	***7,427***	***83,077***	***90,629***
Jeepney	61	***2,161***	8,519	***10,741***
Taxi / Fx	16	1,335	8,301	9,652
Bus	32	704	6,635	7,371
Van	48	1,313	***14,413***	***15,774***
Truck	***129***	1,402	***15,737***	***17,268***
Train	17	10	3	30
Kuliglig	-	4	6	10
Animal-drawn vehicle	-	-	1	1
Heavy Equipment	-	-	3	3
Unknown Vehicle	34	714	6,808	7,556
TOTAL	**779**	**29,154**	**154,391**	**184,324**

On the table shown before this page, motorcycles have the highest fatality accident rate with 262 involved, then followed by trucks with 129 and cars with 125 total. For non fatal incidents, Motorcycles still have the highest rate with 11,620 shares and followed by cars with 7,427 and PUJ's with 2,161. While for damage to property cars have the highest rate with 83,077 and followed by trucks with 15,737 and vans with 14,413 total.

Collision Types

Collision Type	Fatal	Non Fatal Injury	Damage to Property	Grand Total
Angle Impact	11	983	3,699	4,693
Head-on	12	227	330	569
Hit and Run	***32***	***798***	***4,400***	***5,230***
Hit Object	18	220	1,939	2,177
Hit Parked Vehicle	1	52	2,184	2,237
Hit Pedestrian	194	4,536	NA	4,730
Multiple Collision	19	619	1,866	2,504
No Collision Stated (based on Police Blotter Book)	121	5,454	29,035	34,610
Other	27	341	118	486
Rear-end	28	1,488	14,730	16,246
Self-Accident	34	457	558	1,049
Side Swipe	22	1,928	19,134	21,084
Grand Total	**519**	**17,103**	**77,993**	**95,615**

Breakdown of Hit and Run Collision Incidences	Fatal	Non Fatal Injury	Damage to Property	Grand Total
Hit and Run (Angle Impact)	-	32	362	394
Hit and Run (Head-on)	-	4	6	10
Hit and Run (Hit Parked Vehicle)	-	3	400	403
Hit and Run (Hit Pedestrian)	26	311	-	337
Hit and Run (No Collision Stated)	5	372	2771	3148
Hit and Run (Rear-end)	1	18	231	250
Hit and Run (Side Swipe)	-	58	630	688
Grand Total	***32***	***798***	***4,400***	***5,230***

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	1	34	108	143
Human Error (Alcohol suspected)	-	17	10	27
Human Error (Avoided Hitting Animal)	-	-	1	1
Human Error (Avoided Hitting Another Vehicle)	-	5	1	6
Human Error (Avoided Hitting Pedestrian)	-	1	4	5
Human Error (Driver Error)	7	543	1569	2119
Human Error (Garbage Collector Fell While Collecting Garbage)	-	1	-	1
Human Error (Lost Control)	6	26	5	36
Human Error (Moving Backwards/Backing Inattentively)	-	-	1	1
Human Error (Tired/Asleep)	-	3	7	10
Human Error (Too fast)	-	1	-	1
No Accident Factor (based on Police Blotter Book)	503	16444	76273	93220
Other	-	1	-	1
Other (Due to Humps)	-	1	-	1
Other (Due to Mentally ill Co-Passenger)	1	-	-	1
Other (Due to Oil Spill)	-	3	-	3
Other (Open Manhole / Pathhole)	-	-	2	2
Other (Passenger Jumped-Off)	-	1	-	1
Other (Road Condition)	-	1	1	2
Other (Runover a Scattered Sand)	-	2	-	2
Other (Slippery Road / Wet Road)	1	-	1	2
Vehicle Defect	-	2	1	3
Vehicle Defect (Detached Wheel)	-	-	1	1
Vehicle Defect (Electrical)	-	1	-	1
Vehicle Defect (Lost Brakes)	-	2	2	4
Vehicle Defect (Mechanical)	-	10	8	18
Vehicle Defect (Sudden Unintended Acceleration)	-	1	-	1
Vehicle Defect (Tire Broke)	-	1	-	1
Grand Total	**519**	**17,101**	**77,995**	**95,615**

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.

Updated (February 09, 2016)
Source : Metro Manila Accident Recording and Analysis System (MMARAS) Database
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