

MMARAS

Metro Manila Accident Recording and Analysis System

Traffic Accident Report
January to December 2016

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 managed 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 a database of Fatal, Non Fatal Injury and Damage to Property road crashes, which can indicate areas where safety improvements are needed 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 each year. 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 9 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. However, starting 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 additional information in analyzing the causes of accidents.

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 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 is crucial in providing appropriate directional trust in the fight to make the roads of Metro Manila a safer place for everyone.

The Road Safety Unit can be contacted for further information or assistance at Tel: 882-4151-57 loc. 1135.

Compilation of January to December Reports for the Year 2016

Data Sources

Two data sources are available at RSU:

- Individual report forms for each accident, gathered by Data Researchers Group of RSU from different stations and District 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.

Overall Statistics

Table 1. Shows the number of road crash incidents/cases gathered and compiled from January to December 2016, classified by month.

Month	Fatal	Non Fatal Injury	Damage to Property	Grand Total
January	45	1518	7187	8,750
February	54	1433	7081	8,568
March	35	1589	7236	8,860
April	36	1423	7961	9,420
May	36	1356	7629	9,021
June	26	1304	7888	9,218
July	26	1265	8224	9,515
August	25	1274	8289	9,588
September	24	1271	8519	9,814
October	41	1335	7595	8,971
November	36	1284	7449	8,769
December	42	1364	7422	8,828
Grand Total	426	16,416	92,480	109,322
Ave. Accident Rate Per Day	1.27 per day	44.85 per day	252.68 per day	298.80 or 299 per day

Table 2. Shows the actual number of persons killed and injured in a road crash for the months of January to December 2016.

	Central	Eastern	Northern	Southern	Western	Total Persons
Fatal	123	46	87	120	70	446
Non Fatal	5,885	3,943	3,184	6,479	1,385	20,876
Total	6,008	3,989	3,271	6,599	1,455	22,840

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, which translates to:

	Central	Eastern	Northern	Southern	Western	Total
Fatal	116	46	84	114	66	426
Non Fatal	4,755	3,099	2,327	5,087	1,148	16,416
DTP	28,846	17,475	5,152	30,914	10,093	92,480
Total	33,717	20,620	7,563	36,115	11,307	109,322

DTP – Damage To Property

Table 4. Below indicates the distribution of accidents by cities and municipalities in Metro Manila from January – December 2016.

City	Fatal	Non Fatal Injury	Damage	Grand Total
Caloocan	36	888	2935	3859
Las Piñas	15	751	2473	3239
Makati	14	1004	11487	12505
Malabon	14	432	674	1120
Mandaluyong	1	503	5219	5723
Manila	66	1148	10093	11307
Marikina	16	1167	3530	4713
Muntinlupa	14	968	2907	3889
Navotas	9	212	550	771
Parañaque	37	1041	4286	5364
Pasay	13	723	4962	5698
Pasig	23	1179	7157	8359
Pateros	-	9	26	35
Quezon	116	4755	28846	33717
San Juan	6	250	1569	1825
Taguig	21	591	4773	5385
Valenzuela	25	795	993	1813
Grand Total	426	16,416	92,480	109,322

On Table No. 4, the Municipality of Pateros has the lowest number of incidences for the year 2016 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, 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 District (CBD)
- Minimal road accidents, and/or
- Manageable traffic direction and control

On the other hand, the Quezon City dominates all the cities and municipalities of Metro Manila in terms of fatal road traffic accident followed by Makati City and then Manila. This is because of the following several factors:

- Both are Central Business Districts (CBD) 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 reduced 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 that happened in Metro Manila through available records from 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 2005-2015 and now 2016.

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 are 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 on the records of 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 the 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	50	16	57	123
Eastern	29	3	14	46
Northern	42	16	29	87
Southern	58	17	45	120
Western	15	5	50	70
Total	194 (43.50%)	57 (12.78%)	195 (43.72%)	446 (100%)

Injuries

District	Drivers Injured	Passengers Injured	Pedestrians Injured	Total Injured
Central	3108	1615	1162	5,885
Eastern	2080	1102	761	3,943
Northern	1401	951	832	3,184
Southern	3028	1691	1760	6,479
Western	616	371	398	1,385
Total	10,233 (49.02%)	5,730 (27.45%)	4,913 (23.53%)	20,876 (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 195 pedestrians (43.72%), 194 drivers (43.50%) and 57 passengers (12.78%) that have been killed in road accidents since January up to December 2016. Looking into persons injured, 10,233 (49.02%) are drivers, 5,730 (27.45%) passengers and 4,913 (23.53%) 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 are a number of accidents this year that do not have the time of the incident recorded. These involved eleven (11) fatal, one hundred ninety six (196) non-fatal injury and seven hundred thirty six (736) damage to property accidents.

Time Hour	Fatal	Non Fatal Injury	Damage	Grand Total
00:00-00:59	25	349	1361	1735
01:00-01:59	25	423	1492	1940
02:00-02:59	26	402	1267	1695
03:00-03:59	27	390	1138	1555
04:00-04:59	27	409	1440	1876
05:00-05:59	21	501	1792	2314
06:00-06:59	17	673	3092	3782
07:00-07:59	11	818	4235	5064
08:00-08:59	8	871	4527	5406
09:00-09:59	13	727	4815	5555
10:00-10:59	17	719	5338	6074
11:00-11:59	16	741	5717	6474
12:00-12:59	17	732	5395	6144
13:00-13:59	12	657	4900	5569
14:00-14:59	9	807	5723	6539
15:00-15:59	11	840	5547	6398
16:00-16:59	21	843	5207	6071
17:00-17:59	21	935	4467	5423
18:00-18:59	12	748	4196	4956
19:00-19:59	15	788	5148	5951
20:00-20:59	10	732	4463	5205
21:00-21:59	10	784	3586	4380
22:00-22:59	13	663	3616	4292
23:00-23:59	31	668	3282	3981
No Time Indicated	11	196	736	943
Grand Total	426	16,416	92,480	109,322
Day-time (06:00-17:55)	173 (00.16%)	9,363 (8.56%)	58,963 (53.93%)	68,499 (62.65%)
Night-time (18:00-05:55)	253 (00.23%)	7,053 (6.45%)	33,517 (30.66%)	40,823 (37.34%)

Overall, 40,823 or 37.34% of accidents occurred during the hours of darkness and without time indicated, while the 68,499 or 62.65% 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 of 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 are 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 2016:

Vehicle Type	Fatal	Non Fatal Injury	Damage to Property	Total No. of Vehicles
Cycle-Pedicab	23	882	491	1,396
Motorcycle	218	11,456	11,431	23,105
Motor Tricycle	21	1,399	2,353	3,773
Car	98	7,544	100,665	108,307
Jeepney	44	1,922	9,191	11,157
Taxi / Fx	13	973	7,374	8,360
Bus	31	719	8,813	9,563
Van	34	1,332	17,406	18,772
Truck	103	1,459	18,052	19,614
Train	14	11	9	34
Kuliglig	-	12	33	45
Animal-drawn vehicle	-	-	3	3
Heavy Equipment	-	3	1	4
Unknown Vehicle	25	558	5,826	6,409
TOTAL	624	28,270	181,648	210,542

On the table shown on this page, motorcycles have the highest fatality accident rate with 218 involved, then followed by trucks with 103 and cars with 98 total. For non fatal incidents, Motorcycles still have the highest rate with 11,456 shares and followed by cars with 7,544 and PUJ's with 1,922. While for damage to property cars have the highest rate with 100,665 and followed by trucks with 18,052 and vans with 17,406 total.

Collision Types

Collision Type	Fatal	Non Fatal Injury	Damage to Property	Grand Total
Angle Impact	14	871	3500	4,385
Head-on	4	216	287	507
Hit and Run	22	719	4,671	5,412
Hit Object	27	185	2,184	2,396
Hit Parked Vehicle	1	59	2143	2,203
Hit Pedestrian	163	4065	NA	4,231
Multiple Collision	14	610	2037	2,661
No Collision Stated (based on Police Blotter Book)	90	5079	31752	36,921
Other	17	333	198	545
Rear-end	21	1635	20238	21,894
Self-Accident	33	566	767	1,366
Side Swipe	20	2078	24703	26,801
Grand Total	426	16,416	92,480	109,322

Breakdown of Hit and Run Collision Incidences	Fatal	Non Fatal Injury	Damage to Property	Grand Total
Hit and Run (Angle Impact)	-	8	76	84
Hit and Run (Head-on)	-	3	2	5
Hit and Run (Hit Parked Vehicle)	-	3	449	452
Hit and Run (Hit Pedestrian)	14	229	NA	243
Hit and Run (No Collision Stated)	8	405	3301	3714
Hit and Run (Rear-end)	-	14	189	203
Hit and Run (Side Swipe)	-	57	654	711
Grand Total	22	719	4,671	5,412

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	62	144	207
Human Error (Alcohol suspected)		24	20	44
Human Error (Driver Error)	11	779	2457	3247
Human Error (Driver Suffered Dizziness)			1	1
Human Error (Driver Suffered from Asthma)		1		1
Human Error (Driver Suffered from Sugar Loss)			1	1
Human Error (Lost Balance)		1		1
Human Error (Lost Control when applied brake)		1		1
Human Error (Lost Control)	3	15	5	23
Human Error (Passing Thru Red Light)		1		1
Human Error (Tired/Asleep)			1	1
No Accident Factor (based on Police Blotter Book)	411	15514	89809	105734
Other (Road Works)			1	1
Other (Runover a Piece of Stone)		1		1
Other (Runover an Object)			1	1
Other (Slippery Road Due to Oil Spill)		2	4	6
Other (Slippery Road)		1	1	2
Vehicle Defect		1	5	6
Vehicle Defect (Blownout Tire)		2	1	3
Vehicle Defect (Clutch)			1	1
Vehicle Defect (Crash Down)		1		1
Vehicle Defect (Lost Brake)		5	10	15
Vehicle Defect (Mechanical)		5	15	20
Vehicle Defect (Steering Wheel)			1	1
Vehicle Defect (Tire Detached)			2	2
Grand Total	426	16,416	92,480	109,322

Three (3) Accident Causations

1. Human Error
2. Other
3. Vehicle Defect

The MMDA has been coming up with solutions to solve the problem in Road Safety, wherein almost all of the Authority's projects are geared towards Public Safety. Pedestrians facilities and signages are designed to promote safety and convenience, Footbridges have 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 query, there are also numbers of accident 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.

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 (January 24, 2016)

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

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