MMARAS

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

Traffic Accident Report
January to December 2011

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 operated by the Road Safety Unit (RSU) of the MMDA-Traffic Discipline Office-Traffic Engineering Center (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 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 a quarterly analysis of 'Fatal', "Non Fatal' and 'Damage to Property' road accidents that have been recorded by the PNP Traffic Accident Investigators for the year 2011. The information is presented in graphical and 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. All Homicides (Fatal), Physical Injury (Non Fatal) and Damage to Property Cases are gathered from the Traffic Police Blotter Book and encoded at the MMARAS Database 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 all these incidences to our MMARAS database and provide various offices (internal or external) for their analysis to the formulation of various 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 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: 882-4151-57 loc. 297.

Compilation of January to December Reports for the Year 2011

Data Source

- Traffic accident gathered by Data Researchers Group of the RSU from different Stations and Districts Offices of the Traffic Enforcement Group.

Overall Statistics

Table 1. Shows the number of road crash incident reports gathered and compiled from January to December 2011, classified by month.

Month	Fatal	Non Fatal Injury	Damage to Property	Grand Total
January	34	1396	4718	6148
February	35	1218	4508	5761
March	34	1388	5137	6559
April	32	1236	4338	5606
May	34	1246	4870	6150
June	30	1130	4930	6090
July	24	1272	5299	6595
August	25	1305	5147	6477
September	21	1355	5201	6577
October	33	1374	5515	6922
November	22	1326	5221	6569
December	46	1581	6029	7656
Grand Total	**370**	**15,827**	**60,913**	**77,110**
Ave. Accident Rate Per Day	**1.01 per day**	**43.36 per day**	**166.88 per day**	**211.25 or 212 per day**

Table 2. Shows the actual number of persons killed and injured in a road crash for the months of January to December 2011.

	Central	Eastern	Northern	Southern	Western	Total Persons
Fatal	156	47	48	119	26	396
Non Fatal	6917	3729	2655	6037	926	20,264
Total	**7,073**	**3,776**	**2,703**	**6,156**	**952**	**20,660**

Note that a 'fatal' or a 'non-fatal' accident could involve one or more person killed and injured.

Table 3. In terms of the number of road crashes involved, by accident severity, this translates to:

	Central	Eastern	Northern	Southern	Western	Total
Fatal	142	44	45	113	26	370
Non Fatal	5031	3281	2107	4746	663	15,827
DTP	19644	12755	4994	19965	3555	60,913
Total	**24,817**	**16,079**	**7,146**	**24,824**	**4,244**	**77,137**

DTP – Damage to property

Table 4. Below indicates the distribution of road crash incidents by cities and municipalities in Metro Manila from January – December 2011.

City	Fatal	Non Fatal Injury	Damage	Grand Total
Caloocan	14	648	2425	3087
Las Piñas	8	522	2547	3077
Makati	**24**	**1075**	**6061**	**7160**
Malabon	**3**	**224**	**599**	**826**
Mandaluyong	8	565	3058	3631
Manila	**26**	**663**	**3555**	**4244**
Marikina	14	1274	2537	3825
Muntinlupa	16	787	2224	3027
Navotas	**1**	**168**	**625**	**794**
Parañaque	18	912	2976	3906
Pasay	20	576	3167	3763
Pasig	20	1210	5633	6863
Pateros	**0**	**1**	**35**	**36**
Quezon	**142**	**5031**	**19644**	**24817**
San Juan	2	231	1527	1760
Taguig	27	873	2955	3855
Valenzuela	27	1067	1345	2439
Grand Total	**370**	**15,827**	**60,913**	**77,110**

On the table no. 4, the municipality of Pateros has the lowest number of incidences for the year 2011 from January to December, followed by Malabon and Navotas. We can now consider these LGU's to be the safest in Metro Manila in terms of road crashes is concerned, since they have lesser records on fatal and non-fatal incidences 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 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 crash incidents followed by City of Manila and 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. Same with Makati and Manila which has big land areas.
- It is noted that the major thoroughfares such as EDSA, Commonwealth Ave., Quezon Ave., Radial Road 10 and Roxas Blvd. are located within these cities.

However, problems on road crash incidents 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, road crash might be reducing in the future

Known deficiencies

The concept of collecting traffic accident data was revised by tasking the 8 personnel of Road Safety Unit - Data Researchers Group to gather and copy all those road crashes that had happened in Metropolitan Manila through the Police Traffic Crash Blotter Books in every traffic stations instead of letting the Traffic Accident Investigator make their own road crash incident report and be submitted in this office. This new concept increases the statistics of collected road crash incident data every year by.

Given the complex mechanism for collecting and gathering of road crash 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 road crashes are being omitted because copied data are based from the records on the blotter book of every traffic stations where road crashes (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 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	54	24	78	156
Eastern	21	8	18	47
Northern	29	5	14	48
Southern	50	14	55	119
Western	5	5	16	26
Total	**159 (40.15%)**	**56 (14.14%)**	**181 (45.70%)**	**396 (100%)**

Injuries

District	Drivers Injured	Passengers Injured	Pedestrians Injured	Total Injured
Central	2760	2515	1642	6,917
Eastern	1928	809	992	3,729
Northern	1056	572	1027	2,655
Southern	2752	1549	1736	6,037
Western	436	361	129	926
Total	**8,932 (44.08%)**	**5,806 (28.65%)**	**5,526 (27.27%)**	**20,264 (100%)**

A person involved in a road crash may indicate a driver, a passenger or a pedestrian. Of these types of persons involved, we have recorded 181 pedestrians (45.70%), 159 drivers (40.15%) and 56 passengers (14.14%) that have been killed in road crashes since January up to December 2011. Looking into persons injured, 8,932 (44.08%) are drivers, 5,806 (28.65%) passengers and 5,526 (27.27%) pedestrians. The relatively high proportion of drivers, passengers 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 road crashes that did not have the time of the incident recorded based on blotter. And these involved eleven (11) in fatal cases, five hundred and ten (510) in non-fatal injury cases and one thousand and thirty-two (1,032) in damage to property cases.

Time Hour	Fatal	Non Fatal Injury	Damage	Grand Total
00:00-00:59	11	237	607	855
01:00-01:59	24	383	909	1316
02:00-02:59	26	372	925	1323
03:00-03:59	21	352	835	1208
04:00-04:59	23	399	1024	1446
05:00-05:59	16	489	1203	1708
06:00-06:59	16	709	1834	2559
07:00-07:59	6	809	2763	3578
08:00-08-59	8	831	3137	3976
09:00-09:59	7	768	3465	4240
10:00-10:59	11	816	3960	4787
11:00-11:59	10	794	3927	4731
12:00-12:59	17	857	3429	4303
13:00-13:59	14	660	3114	3788
14:00-14:59	7	700	3624	4331
15:00-15:59	14	715	3725	4454
16:00-16:59	16	751	3334	4101
17:00-17:59	8	825	2885	3718
18:00-18:59	10	670	2673	3353
19:00-19:59	16	746	3211	3973
20:00-20:59	14	684	2797	3495
21:00-21:59	25	611	2564	3200
22:00-22:59	17	598	2152	2767
23:00-23:59	22	541	1784	2347
No Time Indicated	11	510	1032	1553
Grand Total	**370**	**15,827**	**60,913**	**77110 (100%)**
Day-time (06:00-17:55)	**134 (00.17%)**	**9,235 (11.98%)**	**39,197 (50.83%)**	**48,566 (62.98%)**
Night-time (18:00-05:55)	**236 (00.31%)**	**6,592 (08.55%)**	**21,716 (28.16%)**	**28,544 (37.02%)**

Overall, 28,544 or 37.02% of road crashes occurred during the hours of darkness and without time indicated, while the 48,566 or 62.98% occurred during daytime. But, it can be observed that eventhough most of the crashes occurred at daytime, fatal crashes 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 distribution of vehicles involved in road crashes from January to December 2011:

Vehicle Type	Fatal	% of Total	Non Fatal Injury	% of Total	Damage to Property	% of Total	Total No. of Vehicles
Cycle-Pedicab	20	3.79%	820	3.16%	468	0.39%	**1308**
Motorcycle	***163***	***30.87%***	***9896***	***38.09%***	***7778***	***6.50%***	**17,837**
Motor Tricycle	18	3.41%	1483	5.71%	1962	1.64%	**3,463**
Car	***91***	***17.23%***	***6600***	***25.40%***	***64702***	***54.06%***	**71,393**
Jeepney	51	9.66%	2350	9.04%	9023	7.54%	**11,424**
Taxi / Fx	16	3.03%	1267	4.88%	6060	5.06%	**7,343**
Bus	34	6.44%	811	3.12%	6095	5.09%	**6,940**
Van	26	4.92%	1196	4.60%	10895	9.10%	**12,117**
Truck	84	15.91%	957	3.68%	8439	7.05%	**9,480**
Train	7	1.32%	9	0.03%	3	0.01%	**19**
Kuliglig	-	-	2	0.01%	10	0.01%	**12**
Horse-drawn vehicle	-	-	-	-	2	0.01%	**2**
Push Cart	-	-	2	-	9	0.01%	**11**
Heavy Equipment	-	-	-	-	1	0.01%	**1**
Unknown Vehicle	18	3.41%	588	2.26%	4233	3.54%	**4,839**
TOTAL	**528**	**100%**	**25,981**	**100%**	**119,680**	**100%**	**105,901**

On the table shown before this page, motorcycles have the highest fatality incident rate with 163 involved or 30.87% of the total fatal incidents, then followed by cars with 91 total or 17.23% respectively. For non fatal incidents, Motorcycles still have the highest rate with 9,896 or 38.09% share and followed by cars with 6,600 or 25.40%.

According to the statistics released by the LTO, the distributions of registered vehicles in Metro Manila are:

Jan. to Oct. 2004

Motor cycle	Motor Tricycle	Car	Jeepney/ Taxi/FX	Bus	Truck/ Trailers	Total
284,176	Included at MC	989,281	101,577	13,573	70,145	1,458,752
19.5%		67.8%	7.0%	0.9%	4.8%	100%

Annual 2005

Motor cycle	Motor Tricycle	Car	Jeepney/ Taxi/FX	Bus	Truck/ Trailers	Total
366,394	Included at MC	569,915	558,639	10,404	75,501	1,580,853
23.18%		36.05%	35.34%	0.65%	4.78%	100%

Jan. to Aug. 2006

Motor cycle	Motor Tricycle	Car	Jeepney/ Taxi/FX	Bus	Truck/ Trailers	Total
293,113	Included at MC	430,042	409,066	6,087	60,552	1,198,860
24.45%		**35.87%**	34.12%	0.51%	5.05%	100%

Accident maps

Maps indicating the location of all accidents during this year are not available because our software (Mapinfo) is already obsolete and it is very difficult to plot the accidents due to un-updated street name and landmarks. The maps will be updated and reproduced once the new GIS software (ArcGIS) will be provided and distributed by the Office of the General Manager for Planning of the MMDA to this Unit.

Collision Type

Table 1. Shows the accident statistics by collision type.

Collision Type	Fatal	Non Fatal	Damage	Total
Angle Impact	6	751	2,680	3,437
Head-On	8	157	172	337
Hit and Run (regardless of what collision type)	*24*	*827*	*3,608*	*4,459*
Hit Object (regardless of what object was being hit)	*20*	*298*	*1,713*	*2,031*
Hit Parked Vehicle	1	53	1,115	1,169
Hit Pedestrian	148	4,514	N.A.	4,662
Other	*11*	*449*	*644*	*1,104*
Rear-end	7	632	6,484	7,123
Self-Accident	32	639	625	1,296
Side Swipe	11	1,036	8,609	9,656
No Collision Stated (as based in the blotter book)	102	6,471	35,263	41,836
Grand Total	**370**	**15,827**	**60,913**	**77,110**

Accident Causations

Accident Factor	Fatal	Non Fatal Injury	Damage to Property	Grand Total
Human Error		8	179	187
Human Error (Alcohol suspected / Jaywalking)	1			1
Human Error (Alcohol suspected)	2	80	63	145
Human Error (Avoided Hitting Animal / Lost Control / Wet-Slippery Road)		1		1
Human Error (Avoided Hitting Animal)		1		1
Human Error (Avoided Hitting Another Vehicle)		9	13	22
Human Error (Avoided Hitting Pedestrian)		6	23	29
Human Error (Backing Inattentively)		8	32	40
Human Error (Bad overtaking / Lost Control)		1		1
Human Error (Bad overtaking)		5	3	8
Human Error (Bad turning)		1	15	16
Human Error (Cut by Another Vehicle)		1	1	2
Human Error (Disobey sign or traffic lights)		1	2	3
Human Error (Driver Error)	3	835	1727	2565
Human Error (Entering One Way / Counterflow)		1	1	2
Human Error (Inattentive / Too fast)		4		4
Human Error (Inattentive)		2	3	5
Human Error (Lost Balance)		2		2
Human Error (Lost Control)	7	69	66	142
Human Error (Lost Control / Alcohol suspected)			1	1
Human Error (Sudden Stop)		1		1
Human Error (Tired / Asleep)		1	1	2
Human Error (Too close)			1	1
Human Error (Too fast)		4	2	6
Human Error (Using Mobile Phone)			2	2
Other			1	1
Other (Due to Scattered Stones on the Road)			1	1
Other (Flooded)		1	1	2
Other (Heavy Rain)			1	1
Other (Hit by Running Person)			1	1
Other (Hold-up)		1		1
Other (Intentional)		1		1
Other (Poor Lighting)		1		1
Other (Runover Potholes)		1		1
Other (Wet / Slippery Road)		9	3	12
Vehicle Defect		6	10	16
Vehicle Defect (Chain Detached)		1		1
Vehicle Defect (Flat Tire)		1	1	2
Vehicle Defect (Lost Brake)		11	17	28
Vehicle Defect (Mechanical)	1	4	14	19
Vehicle Defect (Sudden Stop of Engine)			1	1
Vehicle Defect (Tire Exploded)		2	1	3
No Accident Causation Stated (based on Police Blotter)	356	14747	58726	73829
Grand Total	**370**	**15,827**	**60,913**	**77,110**

Top Five (5) Accident Causations

(1) **Human Error/ Driver Error** – driver error is also human error; it is just not clearly stated what kind of Human Error had happened that resulted to a road crash.
(2) **Alcohol suspected** – driver, passenger or pedestrian involved in a road crash was found by the authority to have an alcoholic breath.
(3) **Lost Control** – driver usually lost control of it's steering wheel
(4) **Backing Inattentively** – driver miscalculated it's backing motion that resulted into a road crash
(5) **Avoided Hitting Pedestrian** – driver swerve and/or stopped his/her driven vehicle to avoid hitting a pedestrian and resulted to a road crash.

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 14, 2012)
Source : Metro Manila Accident Recording and Analysis System (MMARAS) Database
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