

MMARAS

Metro Manila Accident Reporting and Analysis System

Annual Report
January to December 2008

Produced by the Road Safety Unit (RSU)
Traffic Operations Center (TOC)
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 Operations Center (TOC), 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 an annual analysis of 'Fatal', "Non Fatal' and 'Damage to Property' road accidents that have been recorded by the PNP Traffic Accident Investigators for the year 2008. The information is presented in graphical and tabular form, which provides a readily identifiable pattern of accident locations and causation patterns. Annual comparisons of traffic accident statistics are also included in this report.

The Road Safety Unit currently has 9 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 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 2008

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 accident reports gathered and compiled from January to December 2008, also classified by month.

Month	Fatal	Non Fatal Injury	Damage to Property	Grand Total
January	23	963	4191	5177
February	22	1012	3776	4810
March	17	1003	4119	5139
April	30	1017	4369	5416
May	16	918	4098	5032
June	27	901	4215	5143
July	20	1066	4496	5582
August	30	1134	4342	5506
September	21	1083	4441	5545
October	18	1135	4474	5627
November	21	974	4101	5096
December	24	1047	4462	5533
Grand Total	269	12,253	51,084	63,606

Table 2. Shows the number of persons killed and injured in road accident for the months of January to December 2008.

	Central	Eastern	Northern	Southern	Western	Total Persons
Fatal	105	43	27	66	35	276
Non Fatal	4838	2895	2351	4181	946	15,211
Total	4,943	2,938	2,378	4,247	981	15,487

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. In terms of the number of accidents involved, by accident severity, this translates to:

	Central	Eastern	Northern	Southern	Western	Total
Fatal	101	42	27	64	35	269
Non Fatal	3685	2548	1824	3543	653	12,253
DTP	15511	11698	4432	16221	3222	51,084
Total	19,297	14,288	6,283	19,828	3,910	63,606

DTP – Damage to property

Table 4. Below indicates the distribution of accidents by cities and municipalities in Metro Manila from January – December 2008.

City	Fatal	Non Fatal Injury	Damage to Property	Grand Total
Caloocan	15	848	2306	3169
Las Piñas	8	580	2457	3045
Makati	15	674	4381	5070
Malabon		202	553	755
Mandaluyong	2	418	3033	3453
Manila	35	653	3222	3910
Marikina	18	1028	1924	2970
Muntinlupa	4	614	2423	3041
Navotas		118	496	614
Parañaque	14	587	2749	3350
Pasay	8	314	2525	2847
Pasig	21	807	5195	6023
Pateros		35	123	158
Quezon	101	3685	15511	19297
San Juan	1	295	1546	1842
Taguig	15	739	1563	2317
Valenzuela	12	656	1077	1745
Grand Total	269	12,253	51,084	63,606

On the table no. 4, the municipality of Pateros has the lowest number of incidences for year 2008 from January to December, followed by Navotas. We can now consider these LGU's to be the safest in Metro Manila in terms of road traffic accident is concerned, since they have no/lesser recorded fatal and non-fatal incidences in the MMARAS. 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 traffic accident followed by City of Manila. 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.
- It is noted that 4 on the 7 major thoroughfares such as EDSA, Commonwealth Ave., Quezon Ave. and Radial Road 10 are located within these cities.

However, problems on road traffic accident in Quezon City would be given preference by this unit in conducting road safety audit and providing remedial measures on the "blackspots" or accident-prone areas of this city. 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 Metropolitan 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.

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 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	39	11	55	105
Eastern	30	5	8	43
Northern	8	5	14	27
Southern	34	5	27	66
Western	11	1	23	35
Total	122	27	127	276

Injuries

District	Drivers Injured	Passengers Injured	Pedestrians Injured	Total Injured
Central	1686	1773	1379	4,838
Eastern	1372	822	701	2,895
Northern	812	620	919	2,351
Southern	1584	1019	1578	4,181
Western	442	342	162	946
Total	5,896	4,576	4,739	15,211

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 127 pedestrians, 122 drivers and 27 passengers that have been killed in road accidents since January up to December 2008. While looking into persons injured, 5,896 are drivers, 4,576 are passengers and 4,739 are 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 accidents this year that did not have the time of the incident recorded. These involved seven (7) fatal, three hundred and thirty-seven (337) non-fatal injury and seven hundred and forty-three (743) damage to property accidents.

Time Hour	Fatal	Non Fatal Injury	Damage to Property	Grand Total
0	11	255	634	900
1	13	338	955	1306
2	18	304	859	1181
3	11	262	726	999
4	9	322	1159	1490
5	10	403	1267	1680
6	17	483	1774	2274
7	8	598	2475	3081
8	9	643	2871	3523
9	14	664	3198	3876
10	7	704	3554	4265
11	12	679	3549	4240
12	15	637	2952	3604
13	9	483	2488	2980
14	9	563	3056	3628
15	10	633	3177	3820
16	7	541	2523	3071
17	6	609	2211	2826
18	5	410	1902	2317
19	8	526	2369	2903
20	9	520	2028	2557
21	23	469	1810	2302
22	12	457	1561	2030
23	10	413	1243	1666
No Time Indicated	7	337	743	1087
Grand Total	269	12,253	51,084	63,606 (100%)
Day-time (6:00-17:55)	123 (00.19%)	7,237 (11.38%)	33,828 (53.18%)	41,188 (64.75%)
Night-time (18:00 – 5:55)	146 (00.23%)	5,016 (07.89%)	17,256 (27.13%)	22,418 (35.25%)

Overall, 22,418 or 35.25% of accidents occurred during the hours of darkness and without time indicated, while the 41,188 or 64.75% occurred during the daytime. But, it can be observed that most of the accidents occurred at daytime but 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 distribution of vehicles involved in accidents from January to December 2008:

Vehicle Type	Fatal	% of Total	Non Fatal Injury	% of Total	Damage to Property	% of Total	Total No. of Vehicles
Cycle-Pedicab	11	2.89%	707	3.62%	486	0.48%	1,204
Motorcycle	108	28.42%	6830	34.97%	6820	6.75%	13,758
Motor Tricycle	16	4.21%	1175	6.01%	1853	1.83%	3,044
Car	77	20.26%	5036	25.78%	52784	52.26%	57,897
Jeepney	35	9.21%	2051	10.50%	8785	8.70%	10,871
Taxi / Fx	7	1.84%	983	5.03%	5251	5.20%	6,241
Bus	18	4.74%	608	3.11%	4859	4.81%	5,485
Van	32	8.42%	1169	5.99%	11313	11.20%	12,514
Truck	62	16.31%	673	3.44%	6281	6.22%	7,016
Train	3	0.79%	2	0.01%	17	0.02%	22
Unknown Vehicle	11	2.89%	298	1.52%	2553	2.53%	2,862
TOTAL	380	100%	19,532	100%	101,002	100%	120,914

On the table shown before this page, motorcycles have the highest fatality accident rate with 108 involved or 28.42% of the total fatal accidents, then followed by cars with 71 total or 20.26% respectively. For non fatal incidents, motorcycles still have the highest rate with 6,830 or 34.97% share and followed by cars with 5,036 or 25.78%.

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	2	124	1520	1,646
Head-on	-	7	5	12
<i>Hit and Run (regardless of what collision type)</i>	5	214	1,667	1,886
<i>Hit object (regardless of what object was being hit)</i>	10	127	782	919
Hit parked vehicle	-	2	647	649
<i>Hit Pedestrian</i>	123	4049	-	4,172
<i>Other</i>	8	319	135	462
Rear-end		129	1186	1,315
Self-Accident	18	338	560	916
Side Swipe	20	1692	3190	4,902
No Collision Stated (based on Blotter Book)	83	5252	41392	46,727
Grand Total	269	12,253	51,084	63,606

Table 2. Shows the breakdown of Hit and Run.

Collision Type	Fatal	Non Fatal	Damage	Total
Hit and Run (Angle Impact)			1	1
Hit and Run (Hit parked vehicle)			56	56
Hit and Run (Hit Pedestrian)	2	72		74
Hit and Run (No Collision Stated)	3	139	1605	1747
Hit and Run (Rear-end)			2	2
Hit and Run (Side Swipe)		3	3	6
Grand Total	5	214	1,667	1,886

Continuation of Collision Type

Table 3. Shows the breakdown of Hit object collisions.

Collision Type	Fatal	Non Fatal	Damage	Total
Hit object	3	65	452	520
Hit object (Barriers, e.g. concrete, plastic, steel)	1	19	75	95
Hit object (Beams, e.g. concrete)			1	1
Hit object (Billboards/Signboards/Signages)			10	10
Hit object (Blocks, e.g. concrete)			2	2
Hit object (Bollards, e.g. concrete, steel)			3	3
Hit object (Cable Wires of PLDT, Meralco, etc.)			14	14
Hit object (Establishments, e.g. shops, stores, stalls, etc.)		2	13	15
Hit object (Fences/Walls, e.g. see-thru, concrete, etc.)		9	39	48
Hit object (Footbridges)			2	2
Hit object (Gates)		1	2	3
Hit object (House, Shanty, Barracks, and the like)		2	7	9
Hit object (Islands, e.g. center island, pots and the like)		4	19	23
Hit object (Light/Lamp Posts and the like)			11	11
Hit object (Pavements, e.g. gutter, sidewalk, road)		6	14	20
Hit object (Plants/Trees and the like)		4	12	16
Hit object (Posts of PLDT, Meralco, MRT, e.g. concrete, steel, wood, other)	5	5	48	58
Hit object (Pumps, e.g. gas pump, nozzle, etc.)			4	4
Hit object (Railings, e.g. steel)		2	6	10
Hit object (Vertical Clearance / Ark)			5	5
Hit object (Waiting Shed)			4	4
Hit object (Two or More objects/structures being hit at a time, e.g. Cable Wire & Post, Barrier & Fence, etc.)	1	5	16	22
Hit object (Various Objects, e.g. Door, Glass Panel, Meterbase, Galvanized Iron, Pipes, Stair, etc.)		3	23	26
Grand Total	10	127	782	919

Continuation of Collision Type

Table 4. Shows the breakdown of Hit Pedestrian.

Collision Type	Fatal	Non Fatal	Damage	Total
Hit Pedestrian	123	4044		4167
Hit Pedestrian (Pump Attendant)		1		1
Hit Pedestrian (Traffic Enforcer)		3		3
Hit Pedestrian (Vendor)		1		1
Grand Total	123	4049	-	4,172

Table 5. Shows the breakdown of Other collision or combined collisions.

Collision Type	Fatal	Non Fatal	Damage	Grand Total
Other		6	8	14
Other (Backing Collision)			18	18
Other (Dragged by Wire)			1	1
Other (Fell to Pavement)	1	2	3	6
Other (Hit Animal)			3	3
Other (Hit by a Collapsed Object)			1	1
Other (Hit by a Fallen Object)		1	16	17
Other (Hit by an Object)		1	6	7
Other (Hit by an Unknown Object or Person)			3	3
Other (Hit Obj., Gate + Hitted Obj. Fell to Parked Car)			1	1
Other (Hit Object + Hit Pedestrian)		2		2
Other (Hit Veh. + Hit Obj.)	2	4	13	19
Other (Hit Veh. + Hit Parked Veh.)			1	1
Other (Hit Veh. + Hit Ped.)	3	274		277
Other (Intensional Collision)		1		1
Other (Multiple Collision)			5	5
Other (MWSS Excavation)		1	1	2
Other (Overturned Vehicle)			1	1
Other (Passenger Fell Down)		22		22
Other (Passenger Jump Off)	1	1		2
Other (Passenger Pinned as to Board a PUV)		1		1
Other (Passenger Thrown-Off from Veh.)		1		1
Other (Rammed Post due to Police Chase)		1		1
Other (Run-over a Piece of Stone)		1		1
Other (Runover Victim)	1			1
Other (Vehicle Fell on an Open Manhole)			3	3
Other (Stoning Incident)			51	51
Grand Total	8	319	135	462

Accident Causations

Accident Factors	Fatal	Non Fatal	Damage	Grand Total
Human Error			3	3
Human Error (Alcohol suspected)		6	3	9
Human Error (Avoid Hitting Another Vehicle)		2	2	4
Human Error (Backing Inattentively)		1	2	3
Human Error (Bad overtaking)		83	3596	3679
Human Error (Bad turning / Sudden Stop)		1		1
Human Error (Bad turning)		25	724	749
Human Error (Disobey sign or traffic lights)		124	1181	1305
Human Error (Evaded Animal Crossing)			1	1
Human Error (Evaded Pedestrian Crossing)			1	1
Human Error (Inattentive / Too close)			1	1
Human Error (Inattentive / Too fast)	19	384	3417	3820
Human Error (Inattentive)	50	2186	574	2810
Human Error (Lost Control)	1	4	4	9
Human Error (Moving Counterflow and U-turning)			1	1
Human Error (Moving Counterflow)			2	2
Human Error (Sleeping Under the Truck)	1			1
Human Error (Tired / Asleep)			16	16
Human Error (Too close)	1	200	457	658
Human Error (Too fast / Too close)	3	232	931	1166
Human Error (Too fast)	39	2087	5130	7256
Other	1	41	400	442
Other (Due to Heavy Wind Blows)			1	1
Other (Multiple)			1	1
Other (Road Obstruction Due to ABS-CBN's "Utoy" Shooting)			1	1
Vehicle Defect			1	1
Vehicle Defect (Lost Brake)			3	3
Vehicle Defect (Tire Exploded)			2	2
No Accident Factor Stated (based on blotter book)	154	6877	34629	41660
Grand Total	269	12253	51084	63606

Top Five (5) Accident Causations

- (1) Too Fast**
- (2) Inattentive / Too fast**
- (3) Bad overtaking**
- (4) Inattentive**
- (5) Disobey sign or traffic lights**

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
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.

On-going Activities / Plans of the MRSU

- **Intensified Data Collection**
Good accident record is vital in analyzing and devising appropriate solutions / remedial measures to accident-prone locations. The MRSU Data Researchers Group has been working to further improve the collection of accident data on 'fatal' and 'non-fatal' accidents including the damage to property accidents.
- **Inspection of Accident Sites**
The MRSU has prepared a schedule for the ocular inspection of accident-prone locations to gather more information that would be useful in evaluating accident sites. Three to four accident locations will be visited on a weekly basis.
- **Road Safety Audit**
Road safety features, or lack of it, at selected locations will be identified and appropriate remedial actions will be developed. Engineering measures will be developed for five accident locations every quarter of the year.
- **On- Going Training of Technical Staff**
A lot of on the job training will be undertaken for the new technical staff to developed their knowledge and skills in this new kind of work and endeavor.
- **Revision of MMARAS Form and the Database**
It is a must to revise the MMARAS Form and the Database to incorporate the other data needed in the analysis of traffic accident.
- **Acquire Additional Equipment / Technical Personnel**
It is important to acquire additional equipment such as service vehicle, computers, digital cameras, printer, and other office supplies that enables the unit to perform their assigned tasks well. MRSU also needs to have an Engineer that will head the Road Safety Audit group.

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 29, 2011)

**Source : Metro Manila Accident Reporting and Analysis System (MMARAS) Database
RICHARD DOMINGO**